Project No. 1251-100

Crude Oil Tank Farms Project, Agrood Area 30 (Module-1)

PETROJET Enppi EGPC

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
1	Mechanical Completion Certificate (MCC)	
2	Ready for Startup Certificate (RFSU)	
3	System Punch Lists	
4	System Limits Marked Up P&ID	
5	System Index	
6	Piping Pre-Commissioning	
	6.01) Piping Test Packs	
	6.02) Piping Pre-commissioning Check Lists	
7	Piping Commissioning	
	7.01) Service Test, GLT, CLT and N2 Purging Certificates	
	7.02) Piping Commissioning Check Lists	

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
8	Mechanical Pre-Commissioning	
	8.01) System Mechanical Index	
	8.02) Equipment Drawings	
	8.03) Equipment Datasheets	
	8.04) Boxing-up Certificates	

	8.05) Grouting Certificates	
	8.06) Pre-Alignment Certificates	
	8.07) Mechanical Pre-Commissioning Checklists	
9	**Mechanical Commissioning**	
	9.01) Final Alignment Certificates	
	9.02) Motor Solo Run Certificates	
	9.03) Mechanical Run Test (MRT) Certificates	
	9.04) Mechanical Commissioning Checklists	
	9.05) Mechanical Supplier Check Lists & Reports	
10	**Instrumentation Pre-Commissioning**	
	10.01) System Instrument Index	
	10.02) Instrument Data Sheets	
	10.03) Instrument Cable Schedule	
	10.04) System Instrumentation Wiring Diagram	
	10.05) Hook-up Drawing (Mechanical & Pneumatic)	
	10.06) Instruments Cables Schedule	
	10.07) Instruments Cables Laying Certificates	
	10.08) Instruments Cables Termination Certificates	
	10.09) Instruments Cables Testing Certificates	
	10.10) Instruments Calibration Certificates	
	10.11) Instrument Loop Checks Certificates	
	10.12) Instrumentation Pre-Commissioning Check Lists	
	10.13) Instrumentation Supplier Check Lists & Reports	
11	**Instrumentation Commissioning**	
	11.01) Instrumentation Function Test Certificates	
	11.02) Instrumentation Supplier Check Lists & Reports	
Sr.	**Pre-Commissioning and Commissioning Dossier Index**	**Applicable (Yes/No)**
12	**Electrical Pre-Commissioning**	
	12.01) System Electrical Index	
	12.02) Electrical Drawings	
	12.03) Motor Datasheets	
	12.04) Electrical Cables Schedule	
	12.05) Electrical Cables Laying Certificates	
	12.06) Electrical Cables Testing Certificates	
	12.07) Electrical Cables Termination Certificates	
	12.08) FAT Reports & Certificates	
	12.09) SAT Reports & Certificates	
	12.10) Electrical Pre-Commissioning Check Lists	
	12.11) Electrical Supplier Check Lists & Reports	

13	**Electrical Commissioning**	
	13.01) Electrical -Commissioning Check Lists	
	13.02) Electrical Supplier Check Lists & Reports	
14	**Red Marked-up Drawings**	
	14.01) P&ID	
	14.02) Instrumentation Drawings	
	14.03) Electrical Drawings	

Enppi PETROJET بتروجت

Project: 01251-100
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

Petroleum Pipelines Company
شركة أنابيب البترول

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

Pre-commissioning and Commissioning Dossier Content:

Section	Description		Status	
1-	Mechanical Completion Certificate (MCC) Ready For Start-up (RFSU)			
2-	System Punch Lists			
3-	System Limits Marked Up			
4-	FAT Test Report & Certificates			
5-	System Index.			
6.A-	Electrical Pre-commissioning			
	6.A.1	General Arrangement and Wiring Diagrams		
	6.A.2	Single line Diagram		
	6.A.3	Electrical Panel Schedule		
	6.A.4	Electrical Cable Schedule		
	6.A.5	Pre-Commissioning Check List		
6.B-	Electrical Commissioning			
	6.B.1	Commissioning Check List		
7-	Red Mark-Up Drawings (If Any)			

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

1-Mechanical Completion Certificate (MCC)

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SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

PROJECT TITLE	:	CRUDE OIL TANK FARM PROJECT (AGROOD AREA)
PROJECT No	:	01251-100
SYSTEM NAME	:	Substation Power Transformers 11/6.6kV
SYSTEM ID	:	030-EL-001

THIS IS TO CERTIFY THAT:

- **THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.**
- **ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.**
- **Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.**
- **ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.**
- **THIS SYTEM IS MECHANICALLY COMPLETED ON THE DATE AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.**

EXCEPTIONS :

COMPANY	PETROJET	ENPPI	PMC
NAME	Sobhy Seleem	Mohamed Abbas	Mohamed Ibrahim
TITLE	QC E&I engineer	Construction Mgr.	Elec. engineer
SIGNATURE			
DATE	31/8/2021		31/8/2021

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

2- Ready for Startup Certificate (RFSU)

Enppi

READY FOR START UP CERTIFICATE

PROJECT TITLE	:	EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-30)
PROJECT No.	:	1251-100
SYSTEM /AREA /PLANT	:	Substation Power Transformers 11/6.6kV
SYSTEM /AREA /PLANT No.	:	030-EL-001

THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

EXCEPTIONS :

COMPANY	ENPPI	PPC
NAME	Ahmed El Shafie	Mohamed Ibrahim
TITLE	Commissioning Manager	Elec. engineer
SIGNATURE	Shaf	
DATE	17-6-2021	

10000-000-EK8-FRM-0006 (03/15)

PETROJET Enppi EGPC

READY FOR START UP CERTIFICATE

PROJECT TITLE	:	EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-02)
PROJECT No.	:	1251-100
SYSTEM /AREA /PLANT	:	Substation Power Transformers 11/6.6kV
SYSTEM /AREA /PLANT No.	:	030-EL-001

THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

EXCEPTIONS :

* RFSU for (30-SUB-PTR-1A) to be done after solving leakage problem.

COMPANY	CONSORTIUM	PPC
NAME	Ahmed El Shafie	
TITLE	Commissioning Mgr	
SIGNATURE		
DATE	17-6-2021	

10000-000-EK8-FRM-0006 (03/15)

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

3- System Punch Lists

PETROJET | Enppi | **PUNCH LIST** | EGPC

PROJECT TITLE : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

PROJECT NUMBER : 01251-100	**DISCIPLINE:UTILITIES**
SYSTEM NAME: Substation Power Transformers 11/6.6kV System	**SYSTEM ID:** 030-EL-001
SUB-SYSTEM NAME:	**SUB-SYSTEM ID:**

NO	DESCRIPTION	CAT	ACTION BY	DISP	CLEARANCE APPROVED BY	
1.	All Cables to be installed and tested	A	PTJ	ELE		
2.	power transformer Accessories to be installed	A	PTJ/Enppi	Enppi ELE		
	by vendor & oil filling [Enppi/PTJ]	A				
3	NER to be Aligned properly	B	PTJ	ELE		

CAT: CATEGORY(A,B,C) ,ACTION BY: (ENPPI,CONST.CONTRACTOR,SUPPLIER.....) , DISP: DESCIPLINE(PIP,MECH,ELECT,INST.....)

COMPANY	PTJ	ENPPI	PMC
NAME	Sabry Seleem	Raw	
SIGN.			
DATE	6-4-2021		

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

4- System Limits Marked Up P&ID

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

5- System Index

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

6- Piping Pre-Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

6.01- Piping Test Packs

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

6.02- Piping Pre-commissioning Check Lists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

7- Piping Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

7.01- Service Test, GLT, CLT and N2 Purging Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

7.02- Piping Commissioning Check Lists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8- Mechanical Pre-Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.01- System Mechanical Index

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.02- Equipment Drawings

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.03- Equipment Datasheets

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.04- Boxing-up Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.05- Grouting Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.06- Pre-Alignment Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

8.07- Mechanical Pre-Commissioning Checklists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9- Mechanical Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9.01- Final Alignment Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9.02- Motor Solo Run Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9.03- Mechanical Run Test (MRT) Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9.04- Mechanical Commissioning Checklists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

9.05- Mechanical Supplier Check Lists & Reports

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10- Instrumentation Pre-Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.01- System Instrument Index

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.02- Instrument Data Sheets

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.03- Instrument Cable Schedule

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.04- System Instrumentation Wiring Diagram

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.05- Hook-up Drawing (Mechanical & Pneumatic)

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.06- Instruments Cables Schedule

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.07- Instruments Cables Laying Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.08- Instruments Cables Termination Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.09- Instruments Cables Testing Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.10- Instruments Calibration Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.11- Instrument Loop Checks Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.12- Instrumentation Pre-Commissioning Check Lists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

10.13- Instrumentation Supplier Check Lists & Reports

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

11- Instrumentation Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

11.01- Instrumentation Function Test Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

11.02- Instrumentation Supplier Check Lists & Reports

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12- Electrical Pre-Commissioning

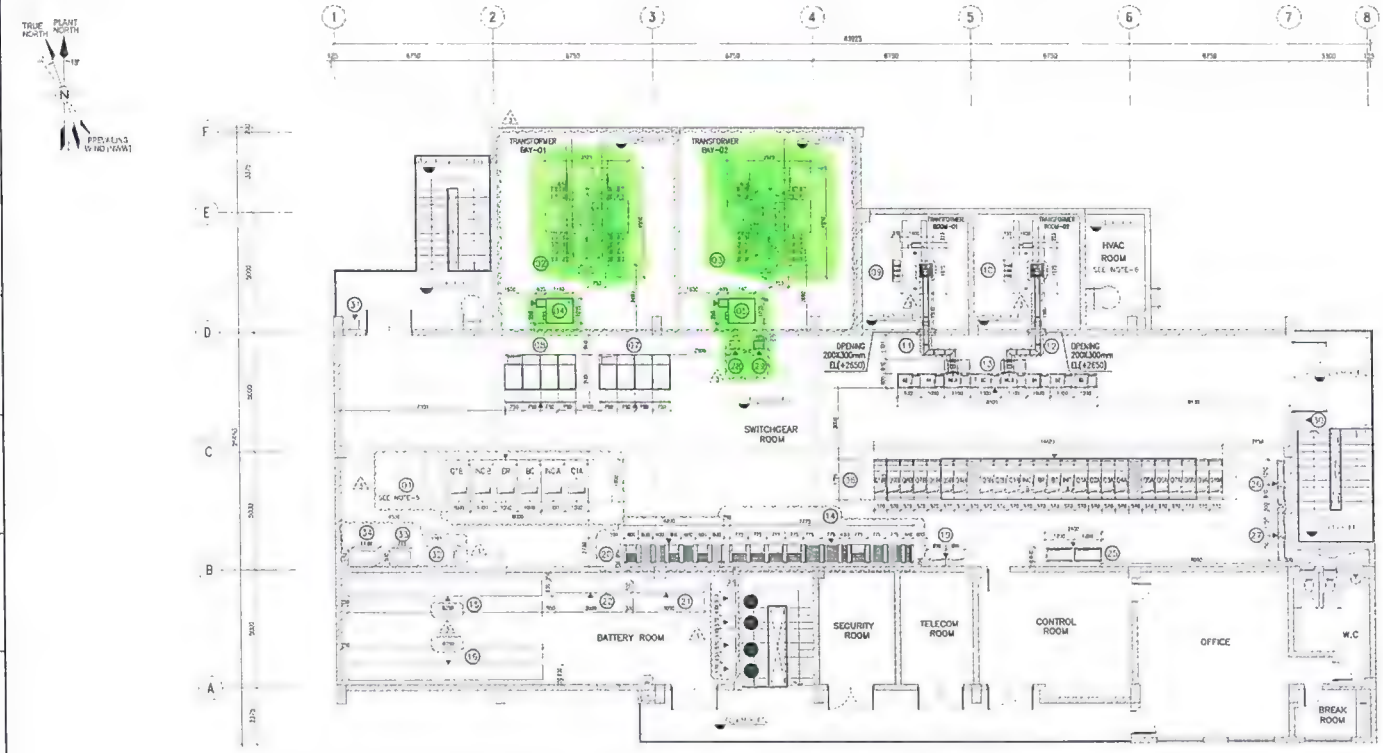
System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.01- System Electrical Index

system no	System Description					
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/1-030-SUB-PTR-1A	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/1-030-SUB-PTR-1B	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/2-030-SUB-PTR-1A	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/2-030-SUB-PTR-1B	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/3-030-SUB-PTR-1A	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P/3-030-SUB-PTR-1B	HV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C1-030-SUB-AVR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C1-030-SUB-AVR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C2-030-SUB-PTR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C2-030-SUB-PTR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C3-030-SUB-AVR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	C3-030-SUB-AVR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	G1-030-SUB-NER-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	G1-030-SUB-NER-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	G2-030-SUB-NER-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	G2-030-SUB-NER-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P-030-SUB-AVR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P-030-SUB-AVR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P1-030-SUB-NER-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P1-030-SUB-NER-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P1-030-SUB-PTR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P1-030-SUB-PTR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P2-030-SUB-PTR-1A	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	P2-030-SUB-PTR-1B	LV Cable	Checklist	EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	030-SUB-NER-1A	Substation Neutral Earthing Resistors	Checklist	EL-09 A /EL-30 A /EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	030-SUB-NER-1B	Substation Neutral Earthing Resistors	Checklist	EL-09 A /EL-30 A /EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	030-SUB-PTR-1A	Substation Power Transformers 11/6.6kV	Checklist	EL-02 A /EL-30 A /EL-31 A
030-EL-001	Substation Power Transformers 11/6.6kV System	Electrical	030-SUB-PTR-1B	Substation Power Transformers 11/6.6kV	Checklist	EL-02 A /EL-30 A /EL-31 A

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

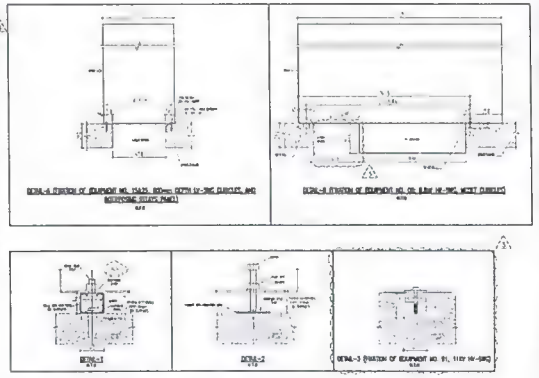
12.02- Electrical Drawings



ELECTRICAL EQUIPMENT LIST

EQUIPMENT NO.	EQUIPMENT TAG	DESCRIPTION	FIXATION
01	030-SUB-HV-SWG-11	11KV, 1250A AIR INSULATED SWITCHGEAR	FLOOR
02	030-SUB-PTR-1A	11/6.6KV, 5MVA OIL POWER TRANSFORMER	FLOOR
03	030-SUB-PTR-1B	11/6.6KV, 5MVA OIL POWER TRANSFORMER	FLOOR
04	030-SUB-NGR-1A	6.6/3KV 200A/10SEC NEUTRAL EARTHING RESISTOR	FLOOR
05	030-SUB-NGR-1B	6.6/3KV 200A/10SEC NEUTRAL EARTHING RESISTOR	FLOOR
06	030-SUB-MV-SWG-01	6.6KV, 1250A AIR INSULATED SWITCHGEAR	FLOOR
07	030-SUB-PFC-1A	6.6KV, 300KVAR POWER FACTOR CORRECTION	FLOOR
08	030-SUB-PFC-1B	6.6KV, 300KVAR POWER FACTOR CORRECTION	FLOOR
09	030-SUB-TR-1A	6.6/0.4KV, 1000KVA DRY-TYPE DISTRIBUTION TRANSFORMER	FLOOR
10	030-SUB-TR-1B	6.6/0.4KV 1000KVA DRY-TYPE DISTRIBUTION TRANSFORMER	FLOOR
11	030-SUB-LV-SWG-1A	0.4KV, 2500A LOW VOLTAGE BUS DUCT	----
12	030-SUB-LV-SWG-1B	0.4KV, 2500A LOW VOLTAGE BUS DUCT	----
13	030-SUB-LV-SWG-1	0.4KV, 2500A AIR INSULATED SWITCHGEAR	FLOOR
14	030-SUB-AC-UPS-1	400VAC, 50KVA AC UNINTERUPTED POWER SUPPLY	FLOOR
15	030-SUB-ACUPS-1-BATT-A	BATTERY RACK-A FOR AC UPS	FLOOR
16	030-SUB-ACUPS-1-BATT-B	BATTERY RACK-B FOR AC UPS	FLOOR
17	030-SUB-ACUPS-CB-A	BATTERY RACK-A CIRCUIT BREAKER BOX FOR AC UPS	WALL
18	030-SUB-ACUPS-CB-B	BATTERY RACK-B CIRCUIT BREAKER BOX FOR AC UPS	WALL

EQUIPMENT NO.	EQUIPMENT TAG	DESCRIPTION	FIXATION
19	030-SUB-UPDP-1	UPS POWER DISTRIBUTION PANEL	WALL
20	030-SUB-DCUPS-1	110VDC, 75A DC UNINTERUPTED POWER SUPPLY	FLOOR
21	030-SUB-DCUPS-1-BATT-A	BATTERY RACK-A FOR DC UPS	FLOOR
22	030-SUB-DCUPS-1-BATT-B	BATTERY RACK-B FOR DC UPS	FLOOR
23	030-SUB-DCUPS-CB-A	BATTERY RACK-A CIRCUIT BREAKER BOX FOR DC UPS	WALL
24	030-SUB-DCUPS-CB-B	BATTERY RACK-B CIRCUIT BREAKER BOX FOR DC UPS	WALL
25	030-SUB-RP-1	INTERPOSING RELAY PANEL	FLOOR
26	030-SUB-ASP-1	AUXILIARY SERVICE PANEL	FLOOR
27	030-SUB-LPDP-1	INDOOR LIGHTING AND SMALL POWER DISTRIBUTION PANEL	FLOOR
28	030-SUB-AVR-1A	AVR PANEL FOR ON-LOAD TAP CHANGER OF 030-SUB-PTR-1A	WALL
29	030-SUB-AVR-1B	AVR PANEL FOR ON-LOAD TAP CHANGER OF 030-SUB-PTR-1B	WALL
30	030-SUB-EPS-1	SUBSTATION EMERGENCY PUSH BUTTON	WALL
31	030-SUB-EPS-2	SUBSTATION EMERGENCY PUSH BUTTON	WALL
32	------	6.6kV HV SWG LIFTING TRUCK	----
33	------	6.6kV HV SWG EARTHING TRUCK	----
34	------	LV SWG LIFTING TRUCK	----



REFERENCE DRAWING AND DOCUMENTS

01251-100-030-KPP-002	AGROOD AREA (MODULE-1) PLOT PLAN
01251-100-030-AEL-001	AGROOD AREA (MODULE-1) MASTER EQUIPMENT LIST
01251-100-030-CBB-221	SUBSTATION CELLAR FLOOR PLAN
01251-100-030-CBB-222	SUBSTATION FIRST FLOOR PLAN
01251-100-030-KEC-001	AGROOD AREA (MODULE-1) GENERAL ELECTRICAL SINGLE LINE DIAGRAM
01251-100-000-KEC-002	ELECTRICAL SINGLE LINE DIAGRAM 6.6kV HIGH VOLTAGE MOTOR CONTROL CENTER
01251-100-000-KEC-003	ELECTRICAL SINGLE LINE DIAGRAM LOW VOLTAGE MOTOR CONTROL CENTER
01251-100-000-EDB-001	ELECTRICAL DESIGN BASIS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL ELEVATIONS ARE IN MILLIMETERS.
3. THIS DRAWING IS CONCERNED ONLY WITH SUBSTATION ELECTRICAL EQUIPMENT
4. ALL EQUIPMENT SHALL BE BOTTOM ENTRY UNLESS OTHERWISE INDICATED
5. EQUIPMENT NO.1 SHALL BE SUPPLIED AND INSTALLED BY EGPC/CANAL ELECTRICAL DISTRIBUTION COMPANY.
6. ELECTRICAL EQUIPMENTS INSIDE HVAC ROOM (HVAC MCC & LCP) SHALL BE SUPPLIED AND INSTALLED BY PETROJET.

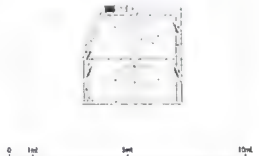
LEGEND

ELECTRICAL EQUIPMENT — EQUIPMENT FRONT
FUTURE ELECTRICAL EQUIPMENT — EQUIPMENT NUMBER
GLAND PLATE — DUMMY PANEL

ABBREVIATIONS

AC	ALTERNATING CURRENT	HV	HIGH VOLTAGE
AVR	AUTOMATIC VOLTAGE REGULATOR	INC	INCOMER CIRCUIT BREAKER
BC	BUS COUPLER CIRCUIT BREAKER	LV	LOW VOLTAGE
BR	BUS RISER	O	OUTGOING CIRCUIT BREAKER
CB	CIRCUIT BREAKER	SWG	SWITCHGEAR
DC	DIRECT CURRENT	UPS	UNINTERRUPTIBLE POWER SYSTEM
DF	DISTANCE BETWEEN FIXATION POINTS		

KEY PLAN



REV	DATE	DESCRIPTION	BY	CHECKED	DESIGNED	APPROVED
3	24.08.20	RE-ISSUED FOR CONSTRUCTION	R.M	SH.A	M.R	M.A
2	03.10.20	ISSUED FOR CONSTRUCTION	M.M.A	SH.A	M.R	M.A
1	11.11.19	RE-ISSUED FOR DESIGN	M.M.A	SH.A/M.A	M.A.R	M.A
0	09.11.19	ISSUED FOR DESIGN	M.M.A	SH.A/M.A	M.A.R	M.A

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EGPC
THE EGYPTIAN GENERAL PETROLEUM CO.
الهيئة العامة المصرية للبترول
EGPC

FOR : THE EGYPTIAN GENERAL PETROLEUM CORPORATION (EGPC) — لاجل الهيئة العامة المصرية للبترول

AT : AGROOD — الموقع : عجرود

EGPC CRUDE OIL TANK FARM AGROOD AREA (MODULE-1) SUBSTATION ELECTRICAL EQUIPMENT LAYOUT

التركيب الهندسي للصناعات البترولية والكيماوية
Enppi إنبي
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE	ENPPI DRAWING NUMBER	SHEET	REVISION
1:100	01251-100-030-EEB-001	1 OF 1	3

Enppi

SUPPLIER'S DOCUMENT COVER PAGE (FOR A4/A3 DOCUMENTS ONLY)

SUPPLIER'S NAME :	Schneider Electric Egypt
PURCHASE ORDER No :	01251-100-510-54-38
DOCUMENT TITLE :	000-SUB-NER-1A/B GA Drawings (Typical)
TOTAL No OF PAGES :	Cover page + 05
SUPLLIER'S ORDER No :	

SUPPLIER'S OWN DOCUMENT No	SUPPLIER'S REVISION	DATE	SUPPLIER APPROVAL SIGNATURE
	00	14/06/2020	Mahmoud Reda
	01	30/06/2020	Mahmoud Reda
	02	07/07/2020	Mahmoud Reda

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- ☐ 4. REJECTED, (REASON TO BE SPECIFIED ON THE DOCUMENT).
- ☐ 5. HOLD FOR A SPECIFIC REASON (TO BE SPECIFIED ON THE DOCUMENT).

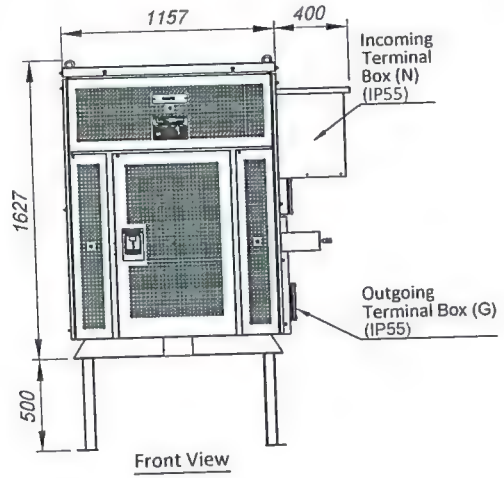
NAME: Shehab Awad

SIGNATURE: DATE : 08/07/2020

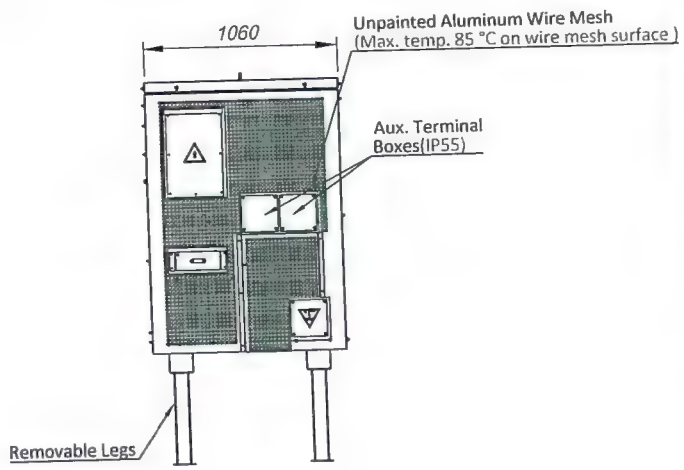
PROJECT TITLE	:	EGPC - Crude Oil Tank Farms (Main Transformer)
ENPPI PROJECT NUMBER	:	01251-100
PACKAGE DESCRIPTION	:	Power Transformers
EQUIPMENT TAG	:	
CODE IDENTIFIER	:	D99

DOCUMENT NUMBER	REV
01251-100-S38-D99-0005	2

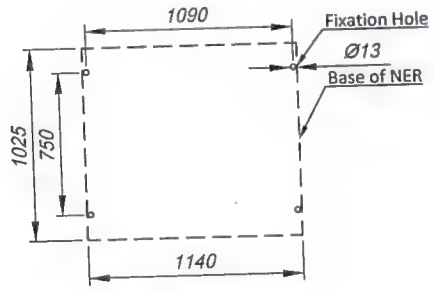
10000-Z-000-PMI-FRM-0033 (11/14)



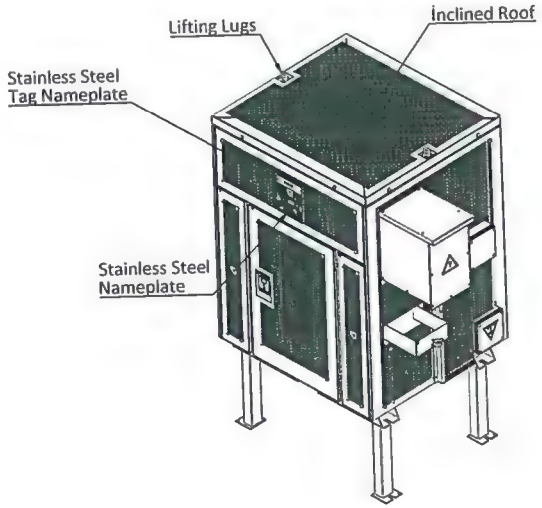
Front View



Side View



Fixation to Concrete



as per ANSI / IEEE 32-1972

Electrical Characteristics	Operation Voltage	6,6 / √3 (±10%) (50 Hz ±5%)	kV
	Insulation Level (B.I.L.)	7,2 / 20 / 60	kV
	Resistance Value @ 48°C	19 (± 5 %)	Ω
	Rated Fault Current	200	A
	Rated Time "On"	10	Se
	Rated Continuous Current	20	A
	Duty Cycle	200 A 10 Sec. 3 Times per Hour	-
	Max. Ambient Temperature	≤ 55	°(
	Max. Temperature Rise	≤ 500	°
Resistance	Max. Resistance Variation	≤ 60	%
	Resistor Material	CrNi Stainless Steel	
	Resistor Type	Grid	
Enclosure	Incoming Terminal	Side	
	Outgoing Terminal	Side	
	Enclosure Protection Degree	IP 23 (Outdoor & Indoor)	
	Enclosure Material	2 mm Hot Dip Galvanized Steel	
	Painting / Min. Thickness	RAL 7035 / ≥ 50 µm	
	Net Weight	≈ 330	

Current Transformer (s)

200 / 1 A, 5P20, 15 VA, 1 pc.

Voltage Transformer (s)

Accessories	Disconnector Switch	---
	Lightning Arrester	---
	Grounding Transformer	---
	Over Current Relay (51N)	CME-420 (Brand, Bender)
	Over Voltage Relay	---
	Sensing Resistor	---
	Heater & Thermostat	100 W 230 Vac

Related Standards

- Main Standard	ANSI / IEEE 32- 1972
- Insulation (B.I.L.)	IEC 60071-1 & IEC 60071
- Post Insulator (> 1 kV)	IEC 60273
- Insulated Bushing (>1 kV)	IEC 60137
- Protection Degree	IEC 60529
- Current Transformer	IEC 61869-2
- Voltage Transformer	IEC 61869-3
- HV Switchgear & Controlgear	IEC 62271 series
- Lightning Arrester	IEC 60099-4
- Galvanization	EN 10346

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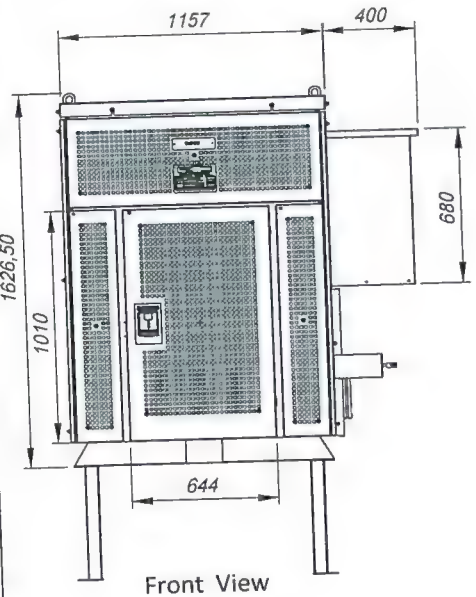
Rev.No. Rev.Nr.	Revision Date	Designed By	Checked By	Approved By
05	07.07.2020	C.C.	M.B.	S.C.
03	20.06.2020	C.C.	M.B.	S.C.
02	11.06.2020	C.C.	M.B.	S.C.
01	16.03.2020	A.Y.	M.B.	S.C.
00	18.01.2020	Y.O.	M.B.	S.C.

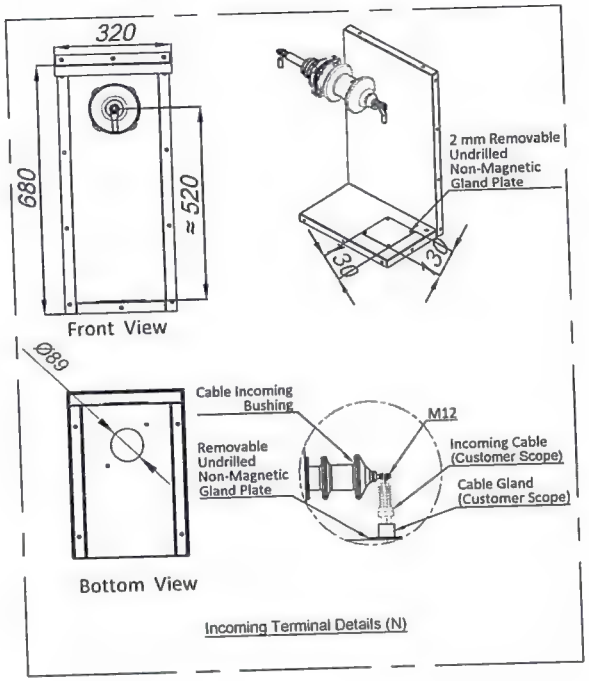
Product (Ürün): 6,6 /√3 kV 19 Ohm 200 A 10 Sec. NEUTRAL EARTHING RESISTOR

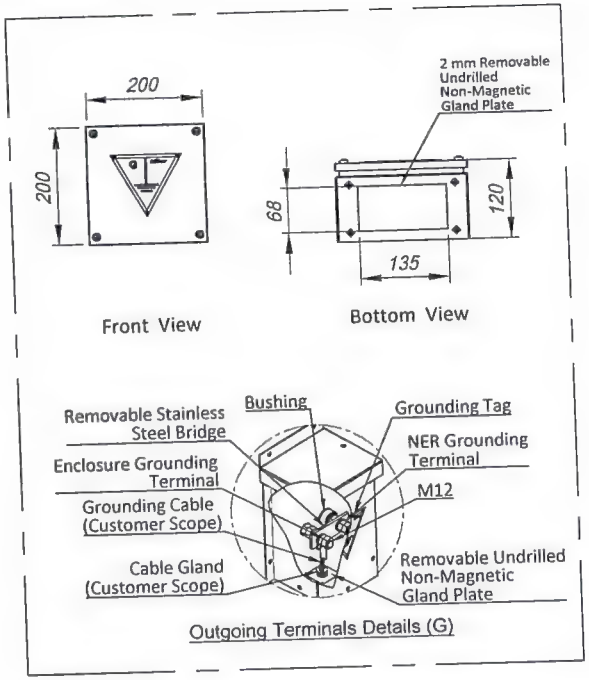
Title (Başlık): TECHNICAL DRAWING

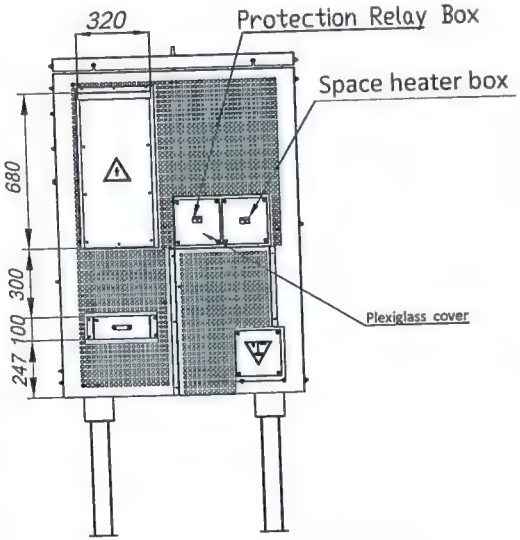
Drawing Nr (Çizim No): NTD.M.BA.2A.10T.01R.23P.20.0069

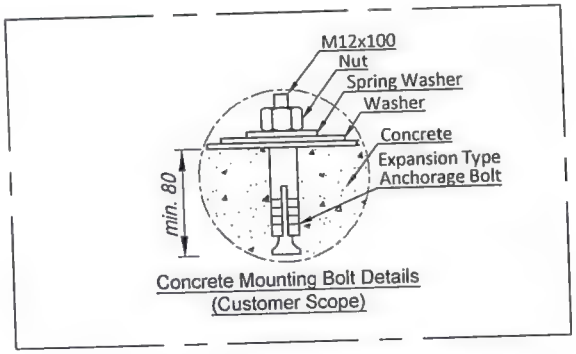
Tolerance (Toleranz): --
Measuring Unit (Ölçü Birimi): m
Sheet (Sayfa): 1
Revision (Revizyon): 0

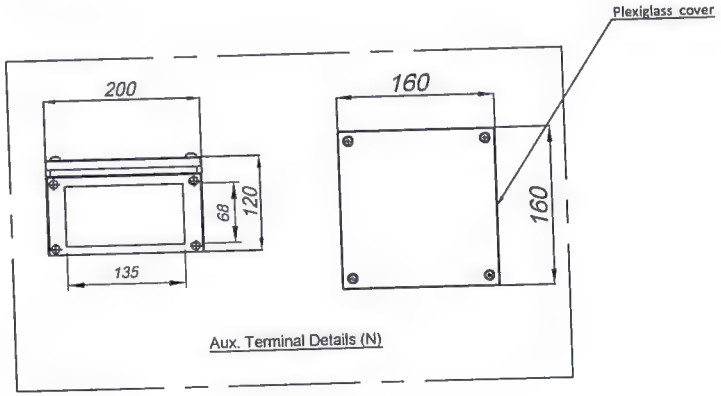












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05	07.07.2020	C.C.	M.B.	S.C.
03	20.06.2020	C.C.	M.B.	S.C.
02	11.06.2020	C.C.	M.B.	S.C.
01	16.03.2020	A.Y.	M.B.	S.C.
00	18.01.2020	Y.O.	M.B.	S.C.

Product (Ürün): 6,6 /√3 kV 19 Ohm 200 A 10 Sec. NEUTRAL EARTHING RESISTOR

Title (Başlık): TECHNICAL DRAWING

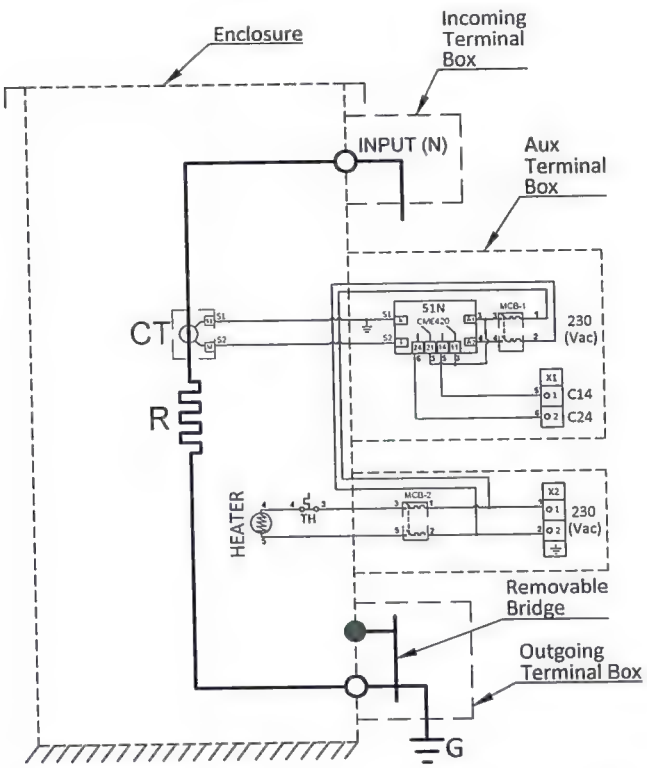
Drawing Nr (Çizim No): NTD.M.BA.2A.10T.01R.23P.20.0069

Tolerance (Tolerans)

Measuring Unit (Ölçü Birimi)

Sheet (Sayfa)

Revision (Revizyon)



CME-420 Setting Values		
	Duty Cycle	Resistor Status
C14	100 A 4 sec.	Resistor Online
C24	300 A 0,1 sec.	Resistor Short Circuit

Resistor (R)	: 19 Ohm 200 A 10 sec.
Current Transformer (CT)	: 200 / 1 A, 5P20, 15 VA, 1 pc.
Over Current Relay (51N)	: CME-420, 1 pc.
Miniature Circuit Breaker (MCB)	: 2x2 A, 4,5 kA, C type, 2 pcs.
Heater(TH)	: 100 W 230 Vac, 1 pc.

Wiring Diagram

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02	11.06.2020	C.C.	M.B.	S.C.
01	16.03.2020	A.Y.	M.B.	S.C.
00	18.01.2020	Y.O.	M.B.	S.C.

Product (Ürün)	6,6 /√3 kV 19 Ohm 200 A 10 Sec. NEUTRAL EARTHING RESISTOR
Title (Başlık)	TECHNICAL DRAWING
Drawing Nr (Çizim No)	NTD.M.BA.2A.10T.01R.23P.20.0069
Tolerance (Tolerans)	-
Measuring Unit (Ölçü Birimi)	mm
Sheet (Sayfa)	3
Revision (Revizyon)	0

1 mm Stainless Steel Name Plate

190

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Made in TURKEY

NEUTRAL EARTHING RESISTOR

6,6/√3 (50 hz)	kV	19	Ω	200	A	10	Sec.

DUTY CYCLE	3 time(s) per hour	TYPE	NTD.M.BA
CT(s) RATIO	200/1 A	WEIGHT	* kgs
VT(s) RATIO	kV	STANDARD	IEEE 32
B.I.L.	7,2 / 20 / 60 kV	SERIAL NO	**
PROTECTION DEGREE	IP 23	PRODUCTION YEAR	2020

Temperature Cofficient: 0,000915 @ 25 °C

Heater: 100 W, 230 Vac

120 98 168 4 x Ø4

* Exact weight will be specified after production

** Serial numbers: 75280620 - 75290620 - 75300620 - 75310620 75320620 - 75330620 - 75340620 - 75350620 - 75360620 - 75370620 75380620 - 75390620 - 75400620 - 75410620

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05	07.07.2020	C.C.	M.B.	S.C.
03	20.06.2020	C.C.	M.B.	S.C.
02	11.06.2020	C.C.	M.B.	S.C.
01	16.03.2020	A.Y.	M.B.	S.C.
00	18.01.2020	Y.O.	M.B.	S.C.

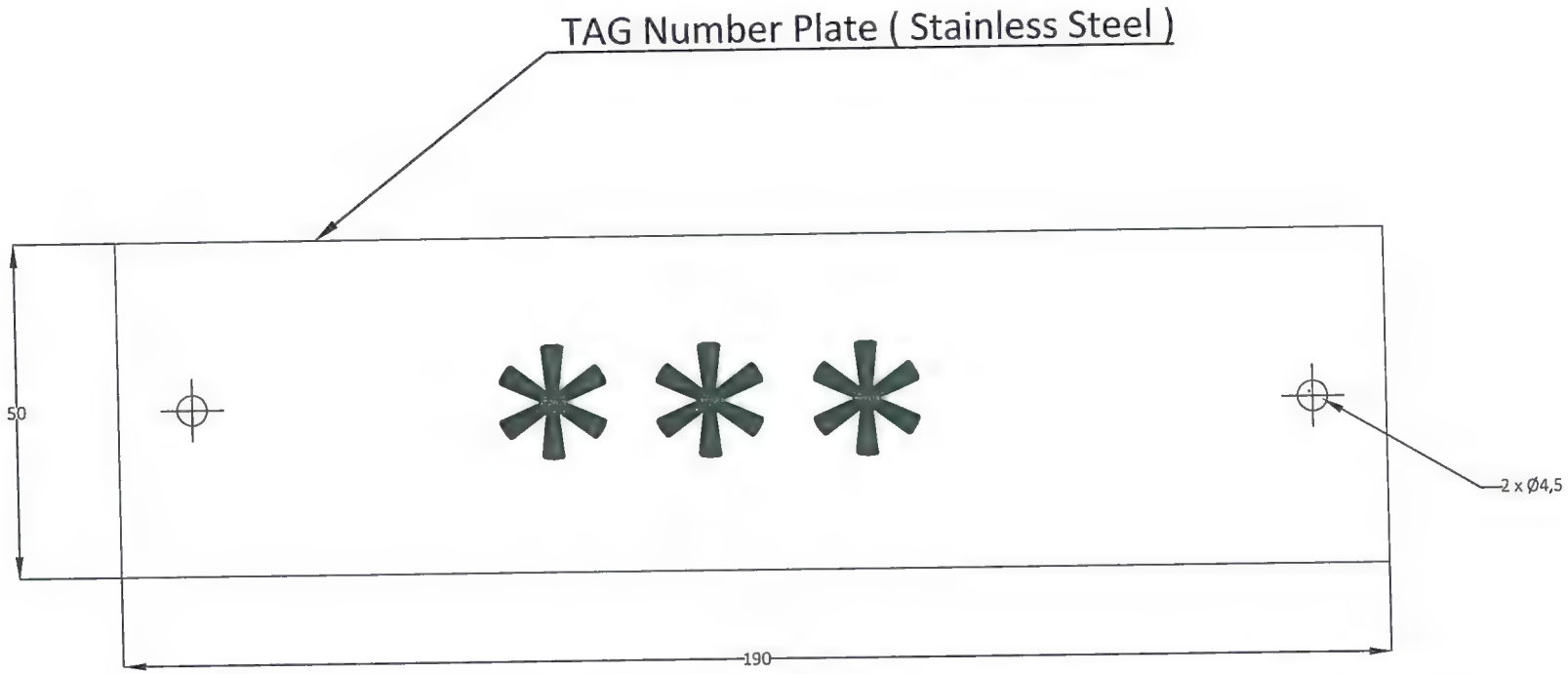
Product (Ürün)	6,6 /√3 kV 19 Ohm 200 A 10 Sec. NEUTRAL EARTHING RESISTOR
Title (Başlık)	TECHNICAL DRAWING
Drawing Nr (Çizim No)	NTD.M.BA.2A.10T.01R.23P.20.0069

Tolerance (Tolerans)

Measuring Unit (Ölçü Birimi)

Sheet (Sayfa)

Revision (Revizyon)



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05	07.07.2020	C.C.	M.B.	S.C.
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02	11.06.2020	C.C.	M.B.	S.C.
01	16.03.2020	A.Y.	M.B.	S.C.
00	18.01.2020	Y.O.	M.B.	S.C.

Product (Ürün): 6,6 /√3 kV 19 Ohm 200 A 10 Sec. NEUTRAL EARTHING RESISTOR

Title (Başlık): TECHNICAL DRAWING

Drawing Nr (Çizim No): NTD.M.BA.2A.10T.01R.23P.20.0069

Tolerance (Tolerans): -

Measuring Unit (Ölçü Birimi): -

Sheet (Sayfa): -

Revision (Revizyon): -

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SUPPLIER'S DOCUMENT COVER PAGE (FOR A4/A3 DOCUMENTS ONLY)

SUPPLIER'S NAME :	Schneider Electric Egypt
PURCHASE ORDER No :	01251-100-510-54-38
DOCUMENT TITLE :	Power Transformer 11/6.6kV - 8MVA GA DRawing (Typical)
TOTAL No OF PAGES :	Cover page + 03
SUPLLIER'S ORDER No :	

SUPPLIER'S OWN DOCUMENT No	SUPPLIER'S REVISION	DATE	SUPPLIER APPROVAL SIGNATURE
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	02	05/08 /2020	Mahmoud Reda

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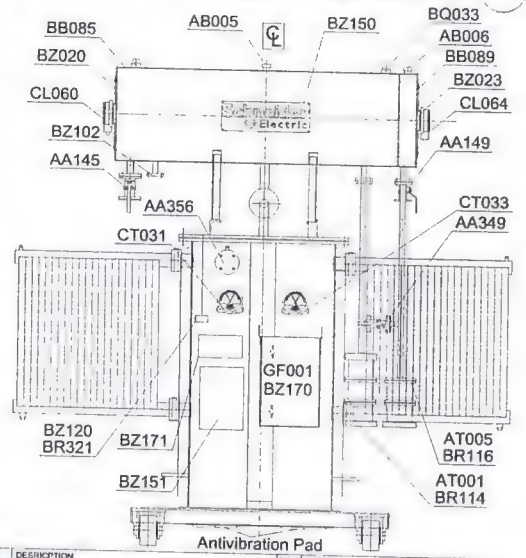
NAME: Shehab Awad

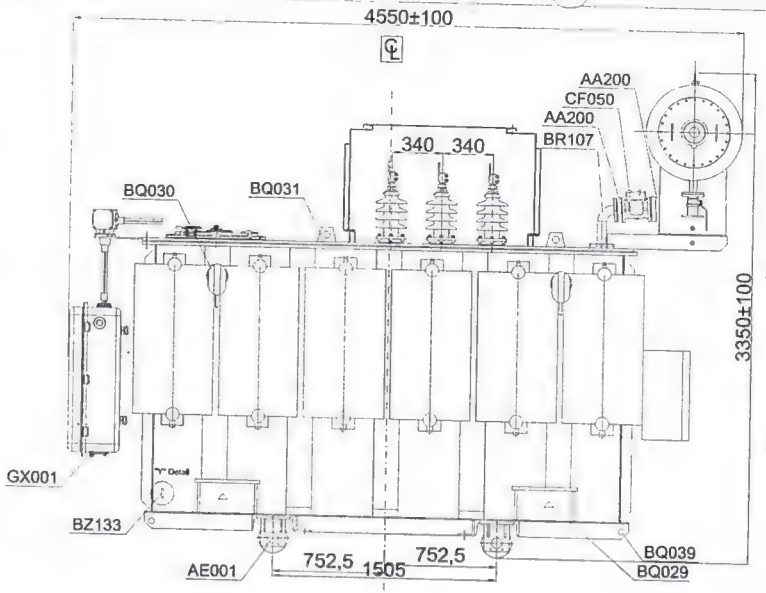
SIGNATURE: DATE : 16/08/2020

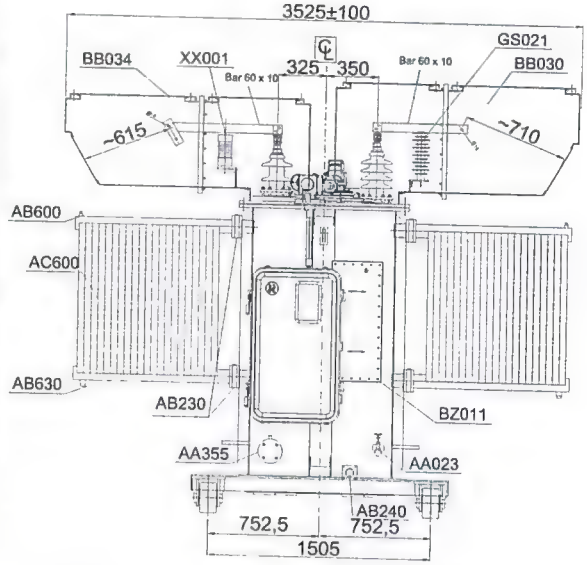
PROJECT TITLE :	EGPC - Crude Oil Tank Farms (Main Transformer)
ENPPI PROJECT NUMBER :	01251-100
PACKAGE DESCRIPTION :	Power Transformers
EQUIPMENT TAG :	030-SUB-PTR-1A/B & 031-SUB-PTR-1A/B
CODE IDENTIFIER :	D99

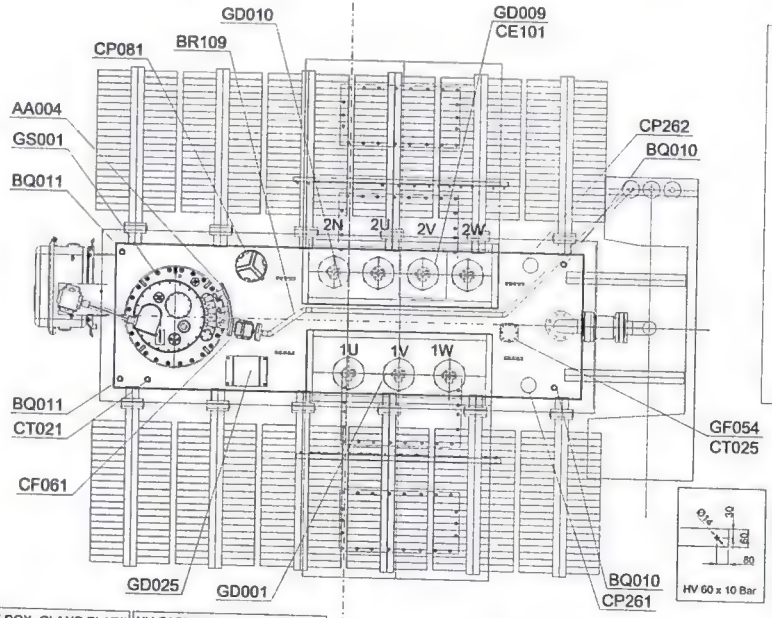
DOCUMENT NUMBER	REV
01251-100-S38-D99-0003	2

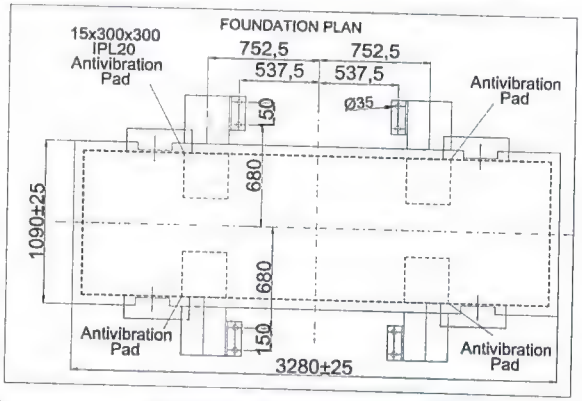
10000-Z-000-PMI-FRM-0033 (11/14)





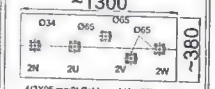






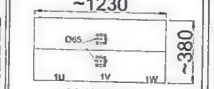
POS	DESRICPTION	PCS	TYPE		DRAWING NO
AA004	OIL DRAIN VALVE	1	1/2"		E2060033
AA023	OIL SAMPLING VALVE - BOTTOM	1	DN15		R292505
AA145	VALVE FOR DRAINING CONSERVATOR OF TANK	1	DN40		E2080764
AA149	VALVE FOR DRAINING CONSERVATOR OF O.L.T.C.	1	DN25		E2080764
AA200	VALVE BETWEEN TANK AND CONSERVATOR	2	DN50		2060062
AA349	PRESSURE-EQUALISING VALVE TANK-O.L.T.C.	1	DN25		E2080764
AA355	VALVE FOR OIL TREATMENT (OIL-OUTLET) -BOTTOM	1	DN50		E2080764
AA356	VALVE FOR OIL TREATMENT (OIL-INLET) -TOP	1	DN50		E2080764
AB005	AIR VENT ON CONSERVATOR OF MAINTANK	1			R293260
AB006	AIR VENT ON CONSERVATOR OF O.L.T.C	1			R293260
AB230	BUTTERFLY VALVE FOR RADIATOR	24			E4202616
AB240	RESIDUAL OIL DRAIN PLUG FOR MAINTANK	1	M52x2		R294062
AB600	AIR VENT PLUG ON RADIATOR	12	6		R293189
AB630	DRAIN PLUG ON RADIATOR	12	12 A		R293189
AC600	RADIATOR	12			
AE001	BIDIRECTIONAL ROLLER	4	10 TN FLAT		E2090140
AT001	DEHYRATING BREATHER FOR CONSERVATOR OF TANK	1	L2		E2060718 - 02
AT005	DEHYRATING BREATHER FOR CONSERVATOR OF O.L.T.C	1	L1		E2060718 - 01
BB030	CABLE BOX HV	1	IP55		
BB034	CABLE BOX LV	1	IP55		
BB085	CONSERVATOR FOR MAINTANK	1			
BB089	CONSERVATOR FOR O.L.T.C.	1			
BQ010	THERMOMETER POCKET	2			E2060640
BQ011	SPARE THERMOMETER POCKET	2			E2060640
BQ029	JACKING PAD	4			
BQ030	LIFTING LUG FOR ENTIRE UNIT	4			
BQ031	LIFTING LUGS FOR CORE AND COIL ASSEMBLY	4			
BQ033	LIFTINGS LUGS FOR CONSERVATOR	2			
BQ039	PULLING EYES	-	Ø50		
BR107	PIPE BETWEEN MAINTANK AND CONSERVATOR	1	DN80		
BR109	PIPE FOR O.L.T.C. AND CONSERVATOR	1			
BR114	PIPE FOR DEHYDRATING BREATHER OF MAINTANK	1			
BR116	PIPE FOR DEHYDRATING BREATHER OF O.L.T.C.	1			
BR321	GAS COLLECTION PIPE FOR GAS SAMPLING	1			
BZ011	HANDHOLE ON THE TANK	1			
BZ020	HANDHOLE FOR CLEANING CONSERVATOR OF TANK	1			
BZ023	HANDHOLE FOR CLEANING CONSERVATOR OF O.L.T.C.	1			
BZ102	EVACUATING CONNECTION ON CONSERVATOR	1			
BZ120	GAS SAMPLING DEVICE FOR BUCHHOLZ RELAY	1			
BZ133	TERMINAL FOR EARTHING OF TANK	2	DIAGONAL Ø12		
BZ150	MANUFACTURE'S NAME PLATE	1			
BZ151	RATING PLATE	1			
BZ170	TRANSFORMER CONTROL PANEL	1			CRP100D283175
BZ171	NAME PLATE	1			MBX100D283175
CF050	BUCHHOLZ RELAY FOR TANK	1			CTP100D283175
CE101	CURRENT TRANSFORMER	1	DR80	2K	411465
CF061	OIL FLOW RELAY FOR O.L.T.C	1	10 VA,875/2A,CL,3		
CL060	OIL LEVEL INDICATOR FOR TANK	1	OJKG-25	1K	OLT100D283175
CL064	OIL LEVEL INDICATOR FOR O.L.T.C.	1	KYSA - B2	2K	423060
CP081	PRESSURE RELIEF DEVICE FOR TANK	1	KYSA - B2	2K	423060
CP261	PRESSURE RELAY FOR MAINTANK	1	T80	2K	4206691
CP262	MANOMETER FOR MAINTANK	1			4206187
CT021	THERMOSTAT FOR MAINTANK OIL	1			4208118
CT025	RESISTANCE THERMOMETER FOR CORE	1			4210693
CT031	DIAL TYPE THERMOMETER FOR TANK OIL TEMPERATURE	3			4201923
CT033	DIAL TYPE THERMOMETER FOR TANK WINDING TEMPERATURE	1	MT-ST 160SK	2K	4219697
GD001	BUSHING FOR H.V.	1	MT-ST 160W		4219696
GD009	BUSHING FOR L.V.	3	EN-24-1250 A / P3		E2041269-02
GD010	BUSHING FOR L.V. NEUTRAL	3	EN-12-1250 A / P4		E2041269-01
GD025	CORE EARTHING BUSHING	1	EN-12-1250 A / P4		E2041269-01
GF001	TERMINAL BOX	1	DT1/250		E2040095
GS001	ON-LOAD TAPCHANGER	1	IP55		MBX100D283175
GS021	SURGE ARRESTER	3	CV III 3590-40,5-12-23-10		OLT100D283175
GX001	MOTOR DRIVE UNIT	1			TBA
XX001	SUPPORT INSULATOR	4	CMA-7		OLT100D283175
					2040939

LV CABLE BOX GLAND PLATE



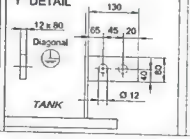
4(3X95 mm2) Cable and (1 x 95) mm2 Cable gland plate is 3 mm drilled, Cable glands are not in scope of supply.

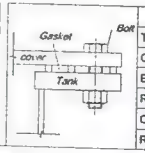
HV CABLE BOX GLAND PLATE



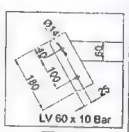
2(3X95 mm2) Cable Cable gland plate is 3 mm drilled, Cable glands are not in scope of supply.

"Y" DETAIL





HV 60 x 10 Bar



LV 60 x 10 Bar

Center line

Description			
Tank	ST-37	6,0	mm
Cover	ST-37	16,0	mm
Base	ST-37	10,0	mm
Radiator	ST-37	1,0	mm
Conservator	ST-37	4,0	mm
Rating Plate	CR-NI	1,0	mm

REV	SCHNEIDER REVISION NO	DATE	AUTHOR	CHECK	APPROVAL	MODIFICATIONS
004	ADH / 0003	29.07.2020	A.ANILIR	Y.KAYNAR		CT025 piece is revised
003	ADH / 0002	30.06.2020	A.ANILIR	Y.KAYNAR		3. issue
002	ADH / 0001	16.06.2020	A.ANILIR	Y.KAYNAR		2. issue
001	ADH / 0000	21.05.2020	A.ANILIR	Y.KAYNAR		1. issue

Dimensions without tolerances according to ISO 13920 class D coarse | Surface texture ISO 1302 | All Dimensions in millimetres unless otherwise stated | IF IN DOUBT PLEASE ASK

Rated Power	6000/ (10000)	kVA	Cooling method		ONAN
Voltage	11000 / 6600		Total weight	: 20500	kg
Current ONAN	HV 419,9 / 524,8	A	Shipping weight with oil	: 15500	kg
	LV 699,8 / 874,7		Untanking weight	: 10400	kg
Angular displacement	Dyn11		Weight of oil	: 4400	kg
Frequency	50	Hz	Oil Type		APAR 60U
			Colour	: RAL7033 N2125 0050 - C5 - H	

Schneider Electric

Approved by

Date 21.05.2020
Drawn ADHE
Designed by A.ANILIR
Checked by Y.KAYNAR

Customer : S.E EGYPT
Scale factor : 1/283175-178-177-176
Description: Dimensional Drawing
Code No. -
Drawing No: DIM100D283175
No. 1 Sheet 1 Scale -
Replaces Replaced by Condition Replaced by
A4-ISO

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(**) Empty fields in the rating plate will be engraved after tests.

Plate Dimensions : 1 x 297 x 420 mm.

Plate Material :CR-NI (SS304)

REV	REVISION NO	DATE	AUTHOR	CHECK	APPROVAL	MODIFICATIONS
003	ADH-7471	20.07.2020	A.ANILIR	B.OZTURK	YILMAZ	
002	ADH-0002	03.07.2020	A.ANILIR	B.OZTURK	YILMAZ	
001	ADH-0001	16.06.2020	A.ANILIR	B.OZTURK	YILMAZ	

Schneider Electric

TOSB Organize Sanayi Bölgesi 1.Cadde No : 6 Şekerpınar - Çayırova - Kocaeli / TÜRKİYE

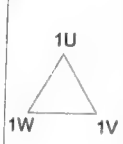
TRANSFORMER	TYPE MINERA MP	YEAR OF MANUFACT.	SERIAL NO.
RATED POWER	8000 / (10000) kVA	FREQUENCY 50 Hz	COOLING METHOD ONAN / (ONAF)
CONNECTION GROUP	Dyn11	NUMBER OF PHASES 3	PRODUCTION STANDARD IEC 60076-1

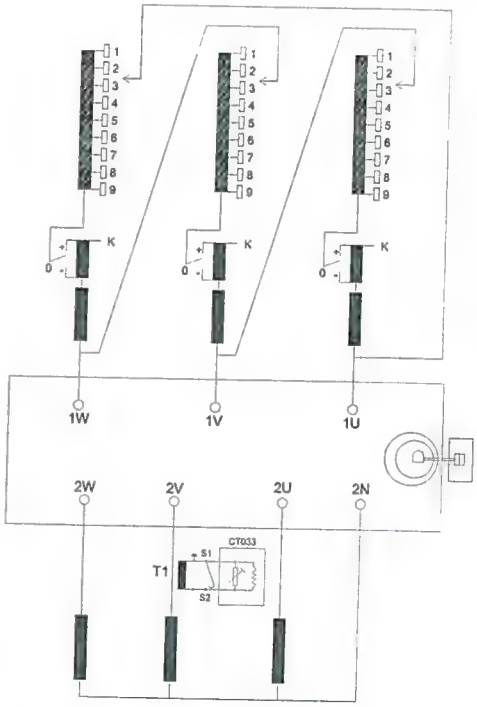
RATED VOLTAGE (V)		RATED CURRENT (A)		
HV	LV	HV	LV	MAXIMUM AMBIENT TEMPERATURE 50 °C
11000	6600	419,9 / (529,9)	699,8 / (874,8)	WINDING TEMPERATURE RISE 55 K
				OIL TEMPERATURE RISE 45 K

BASE (kVA)	SHORT CIRCUIT IMPEDANCE		
8000	POS.1	•	%
	POS.9B	•	%
	POS.17	•	%

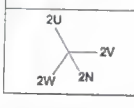
INSULATION LEVEL	HV : LI 75 kV AC 28 kV / LV : LI 60 kV AC 20 kV
TOTAL MASS	20500 kg
UNTANKING MASS	10400 kg
TRANSPORTATION MASS	15500 kg
MASS OF INSULATING LIQUID	4400 kg
TYPE OF INSULATING LIQUID	APAR 60 U (IEC60296)
TANK,RADIATORS ARE VACUUM PROOF.	
TRANSFORMER IP CLASS : IP55	TANK IP CLASS : IP66

HIGH VOLTAGE (TAPPING RATE : +- 10%)

CONNECTION DIAGRAM	VOLTAGE (V)	CURRENT (A) ONAN	CURRENT (A) ONAF	TAP CHANGER SELECTOR		POS.
	12100	381,7	477,1	1	0 +	1
	11963	386,1	482,6	2		2
	11825	390,6	488,2	3		3
	11688	395,5	494,0	4		4
	11550	399,9	499,9	5		5
	11413	404,7	505,9	6		6
	11275	409,6	512,1	7		7
	11138	414,7	518,4	8		8
	11000	419,9	524,9	9		9A
	11000	419,9	524,9	K		9B
	11000	419,9	524,9	1	0 -	9C
	10863	425,2	531,5	2		10
	10725	430,7	538,3	3		11
	10588	436,3	545,3	4		12
	10450	442,0	552,3	5		13
	10313	447,9	559,9	6		14
	10175	453,9	567,4	7		15
	10038	460,2	575,2	8		16
	9900	466,5	583,2	9		17



LOW VOLTAGE

CONNECTION DIAGRAM	VOLTAGE (V)	CURRENT (A)
	6600	437,4 / (546,7)

CURRENT TRANSFORMERS

DEFINITION	BURDEN (VA)	RATIO (A / A)	CLASS
T1	10	875 / 2	CL.3

CRP100D283175

Schneider Electric

Date 21.05.2020
Group ADH-E
Designed by A.ANILIR
Checked by B.OZTURK

Customer : S.E EGYPT
Serial Number : M283175-176-177-178
Description RATING PLATE
Code No. -
Drawing No CRP100D283175
Replaces drawing no.
Cancelled by drawing no.
Sh.No. 1
Sheet 1
Scale -
AutoCAD

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030-SUB-PTR-1A

CTP100D283175

031-SUB-PTR-1A

CTP100D283175

030-SUB-PTR-1B

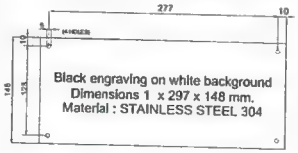
CTP100D283175

031-SUB-PTR-1B

CTP100D283175

REV	REVISION NO	DATE	AUTHOR	CHECK	APPROVAL	MODIFICATIONS
001	ADH / 0001	16.06.2020	ANILIR	KAYNAR		First Issue

** PLATE D297 x 148 CR-NI MATERIAL T 0947



Black engraving on white background
Dimensions 1 x 297 x 148 mm.
Material : STAINLESS STEEL 304

Dimensions without tolerances according to ISO 13920 class D coarse	Surface texture ISO 1302	All Dimensions in millimetres unless otherwise stated	IF IN DOUBT PLEASE ASK

Schneider Electric

Dimensions without tolerances ISO 2768 coarse	Approved by	ACAR	
Date		16.06.2020	
Group		ADH-E	
Designed by		ANILIR	
Checked by		KAYNAR	

Customer : CRUDE OIL

Serial Number : M283175-176-177-178

Description: NAME PLATE

Code No.: -

Drawing No: CTP100D283175

Sh.No.: 1 Sheet: 1

Scale: -/-

Replaces drawing no.

Cancelled by drawing no

AutoCAD

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.03- Motor Datasheets

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.04- Electrical Cables Schedule

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.05- Electrical Cables Laying Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.06- Electrical Cables Testing Certificates

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No	DISPLINE	SHEET NO
PTJ-ELE-RFI-		ITR-EL-0006A	ELECTRICAL	

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	AREA / PACKAGE:
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000	17015900385	400	1000	SUBSTATION

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NUETRAL"M.Ohm"			PHASES & NUETRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
17	P-030-SUB-LPDP-1	3.5x120	✓	o.l	o.l	o.l	o.l							✓	
18	P-030-SUB-ASP-1	3.5x120	✓	o.l	o.l	o.l	o.l							✓	
19	P-030-EPM1-UPDP-1	3.5x50	✓	o.l	o.l	o.l	o.l							✓	
20	P1-030-SUB-ACUPS-1	3x10	✓	.o			o.l							✓	
21	P-030-SUB-IRP-1	3x10	✓				o.l							✓	
22	D-030-SUB-LVSWG-1A	3x10	✓				o.l							✓	
23	D-030-SUB-LVSWG-1B	3x10	✓				o.l							✓	
24	D-030-SUB-IRP-1	3x10	✓				o.l							✓	
25	P1-030-SUB-LVSWG-1A	3x10	✓				o.l							✓	
26	P1-030-SUB-LVSWG-1B	3x10	✓				o.l							✓	
27	C1-030-SUB-ACUPS-1	3x2.5	✓				o.l							✓	
28	C2-030-SUB-ACUPS-1	3x2.5	✓				o.l							✓	
29	C1-030-SUB-DCUPS-1	3x2.5	✓				o.l							✓	
30	C2-030-SUB-DCUPS-1	3x2.5	✓				o.l							✓	
31	P-030-SUB-AVR-1A	3x4	✓				o.l							✓	
32	P-030-SUB-AVR-1B	3x4	✓				o.l							✓	

Remarks :-

Referance :-

	PETROJET	ENPPI	PMC

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No.	DISPLINE	SHEET NO
PTJ-ELE-RFI- 208	02/06/2021	ITR-EL-0006B	ELEC	

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	AREA / PACKAGE:
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000	17015900385	24	500	

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	pair conductors	conductors to armor	Shield to Shield	All Conductors-GND	Overall Shield -GND	Armor -GND	RESULT	
										Pass	FAIL
1	C1-030-SUB-AVR-1A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
2	C2-030-SUB-PTR-1A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
3	C1-030-SUB-AVR-1B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
4	C2-030-SUB-PTR-1B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
5	C1-030-SUB-HVSWG-6.6A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
6	C2-030-SUB-HVSWG-6.6A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
7	C3-030-SUB-HVSWG-6.6A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
8	C4-030-SUB-HVSWG-6.6A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
9	C5-030-SUB-HVSWG-6.6A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
10	C1-030-SUB-HVSWG-6.6B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
11	C2-030-SUB-HVSWG-6.6B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
12	C3-030-SUB-HVSWG-6.6B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	

Remarks :-

Referance

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hassan		
SIGNATURE			
DATE	6/6/2021		

® Islam Sherif

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER
PTJ-ELE-RFI- 208

INSPECTION DATE & TIME 02/06/2021

DOUCUMENT No. ITR-EL-0006A

DISPLINE ELECTRICAL

SHEET NO

INSTRUMENT TYPE:
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

SERIAL: 17015900385

SERVICE VOLTAGE: 400

TEST VOLTAGE: 1000

AREA / PACKAGE: SUBSTATION

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NUETRAL"M.Ohm"			PHASES & NUETRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P1-030-SUB-TR-1A	3x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
2	P1-030-SUB-TR-1B	3x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
3	P1-030-LPDP-CR-1	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
4	P1-030-LPDP-CR-2	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
5	P1-030-LPDP-CR-3	3x16	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
6	P1-030-SUB-NER-1A	3x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
7	P1-030-SUB-NER-1B	3x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
8	P1-030-SUB-PTR-1A	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
9	P2-030-SUB-PTR-1A	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
10	P1-030-SUB-PTR-1B	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
11	P2-030-SUB-PTR-1B	4x10	✓	O.L	O.L	O.L	—	—	—	—	—	—	—	✓	
12	P1-030-SUB-HVSWG-11	4x4	✓	O.L	O.L	O.L	—	—	—	—	—	—	—		
13															
14															
15															
16															

Remarks :-

Referance :-

	PETROJET	ENPPI	PMC
NAME	Ahmed Hassan		
SIGNATURE			
DATE	6/6/2021		

® Islam Shehata

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No.	DISPLINE	SHEET NO
RFI-~~ITT~~206		ITR-EL-0006A	ELECTRICAL	

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	AREA / PACKAGE:
		220 KV	5 kv	

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE "M.Ohm"			PHASE TO NUETRAL"M.Ohm"			PHASES & NUETRAL TO ARMOR "M.Ohm"				RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
1	P/1-030-SUB-PTR-1A	3x95	✓				✓							✓	
2	P/2-030-SUB-PTR-1A	3x95	✓				✓							✓	
3	P/3-030-SUB-PTR-1A	3x95	✓				✓							✓	
4	G1-030-SUB-NER-1A	1x95	✓				✓							✓	
5	P/1-030-SUB-PTR-1B	3x95	✓				✓							✓	
6	P/2-030-SUB-PTR-1B	3x95	✓				✓							✓	
7	P/3-030-SUB-PTR-1B	3x95	✓				✓							✓	
8	G1-030-SUB-NER-1B	1x95	✓				✓							✓	
9	P/1-030-SUB-HVSWG-6.6A	3x95	✓				✓							✓	
10	P/2-030-SUB-HVSWG-6.6A	3x95	✓				✓							✓	
11	P/3-030-SUB-HVSWG-6.6A	3x95	✓				✓							✓	
12	P/4-030-SUB-HVSWG-6.6A	3x95	✓				✓							✓	
13	P/1-030-SUB-HVSWG-6.6B	3x95	✓				✓							✓	
14	P/2-030-SUB-HVSWG-6.6B	3x95	✓				✓							✓	
15	P/3-030-SUB-HVSWG-6.6B	3x95	✓				✓							✓	
16	P/4-030-SUB-HVSWG-6.6B	3x95	✓				✓							✓	
17	P-030-SUB-TR-1A	3x70	✓				✓							✓	
18	P-030-SUB-TR-1B	3x70	✓				✓							✓	
19	P-030-EPM2-TR-1	3x70	✓				✓							✓	

Remarks :-

Referance :-

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. Omar
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No.	DISPLINE	SHEET NO
PTJ-ELE-RFI- 208	02/06/2021	ITR-EL-0006B	ELEC	

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	AREA / PACKAGE:
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000	17015900385	24	500	

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	pair conductors	conductors to armor	Shield to Shield	All Conductors-GND	Overall Shield -GND	Armor -GND	RESULT	
										Pass	FAIL
13	C4-030-SUB-HVSWG-6.6B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
14	C5-030-SUB-HVSWG-6.6B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
15	C1-030-SUB-LVSWG-1A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
16	C1-030-SUB-LVSWG-1B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
17	C1-030-PM-04A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
18	C1-030-PM-04B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
19	C1-030-PM-05A	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
20	C1-030-PM-05B	10x2.5	✓	o.L	—	—	o.L	—	—	✓	
21	C3-030-SUB-AVR-1A	1x3x2.5	✓	o.L	—	—	o.L	—	—	✓	
22	C3-030-SUB-AVR-1B	1x3x2.5	✓	o.L	—	—	o.L	—	—	✓	
23	C6-030-SUB-HVSWG-6.6A	3x2.5	✓	o.L	—	—	o.L	—	—	✓	
24	C6-030-SUB-HVSWG-6.6B	3x2.5		o.L	—	—	o.L	—	—	✓	

Remarks :-

Referance

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hassan	® Islam Sherif	
SIGNATURE			
DATE	6/6/2021		

Enppi PETROJET

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

HI POT INSULATION TEST

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
RFI-206		ITR-EL-0008		1 OF 1

Item/Tag NO.					
Type :-		Core:		Size:	

NO.	Description of check	RESUNT ACCEPT	REJECT	N/A.
1	No damage of cable has found and maintain insulation resistance	✓		
2	Correct cable type/size/ installed as per approved drawing	✓		
3	Calibration test certificate of testing equipment to be checked.	✓		

Continuity Test : ☑ ACCEPT ☐ REJECT ☐ N/A.

Test Equipment List

INSTRUMENT TYPE:	SERIAL:	SERVICE VOLTAGE:	TEST VOLTAGE:	

Insulation Resistance Test MΩ

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM
ol	ol	ol	ol	ol	ol

Hi-Pot test

Phase BR Test Voltage (..1.4.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BK,GR_BR		15 Min.	385 MA	

Phase BK Test Voltage (..1.4.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,GR_BK		15 Min	405 MA	

Phase GR Test Voltage (..1.4.. kV)

Phase	TEST VOLTAGE	TIME	CURRENT	
ARM,BR,BK_GR		15 Min	310 MA	

Insulation Resistance Test MΩ

PHASE TO PHASE			PHASES TO ARMOR		
BR-BK	BR-GR	BR-GR	BR-ARM	BK-ARM	GR-ARM

Remarks :

INSPECTION RESULTS: ☑ APPROVEI ☐ REJECT ☐ APPROVED W/ COMMENT

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. omar
DATE			

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.07- Electrical Cables Termination Certificates

Enppi PETROJET	EGPC CRUDE OIL TANK FARM	EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : LVSWG And Bus Duct Installation

NOTIFICATION NO. : PTJ-RFI-EL-105 DISCIPLINE : ELECTRICAL

DATE : : 2/18/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	Power Transformer Installation	AGROUD MODULE 2 SUB BUILDING	18-Feb-21				
1	031-SUB-PTR-1A						
2	031-SUB-PTR-1B						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

As per Attached

	PETROJET	ENPPI	PMC
NAME :		Rasial	
SIGNATURE			
DATE			

Enppi PETROJET	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

POWER TRANSFORMER PRE INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
		ITR-EL-0016	ELECTRICAL	

JOB DESCRIPTION	AREA DESCRIPTION

Transformer No.		Serial No.	
System Voltage		Rating	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	If any transportation damages are found, it shall be reported to the Transportation Company			
2	The transformer shall be lifted and carried by the lifting lugs			
3	During loading and/or unloading of the transformer by crane, swaying movements should be avoided. As knocks against walls or other objects may cause damage to the HV- windings or			
4	The rollers shall be fitted			
5	The transformer shall be pulled from the pulling eyes on the lower frame. It shall not be moved by pushing on to the coils in any case			
6	The off-loading has to be done carefully			
7	Dust which accumulates on transformer during transport or storage should be cleaned by using compressed air			
8	The storehouse shall be a covered place, which shall not be cooler than -25°C. Transformers in storage must be protected from the direct sunlight and condensation water			
9	Check Direction of Air Flow According to Drawing			
10	Check for Forced Ventilation (Fans controlled by Thermostat system)			
11	Check for Forced Ventilation (Fans Only)			
12	Check for Natural Ventilation (Door Openings, Ventilation Openings) as per below fig.			

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

POWER TRANSFORMER INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
		ITR-EL-0017	ELECTRICAL	

JOB DESCRIPTION	AREA DESCRIPTION

Transformer No.		Serial No.	
System Voltage		Rating	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	The transformer room must be dry and clean, the flowing of the water must be prevented			
2	Adequate ventilation is to be provided for heat dissipation			
3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards			
4	The spacing of the HV cables should be according to standards			
5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection			
6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards			
7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual			

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

Enppi PETROJET	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

POWER TRANSFORMER PRE COMMISSIONING

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
		ITR-EL-0018	ELECTRICAL	

JOB DESCRIPTION	AREA DESCRIPTION

Transformer No.		Serial No.	
System Voltage		Rating	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Verify that equipment name plates are according to the corresponding drawings.			
2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.			
3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.			
4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.			
5	Verify that the installation ground is correctly leveled.			
6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.			
7	Verify that fixed tap connections are as per the drawings.			
8	Check CT's ratings and polarity (Visual). (if available)			
9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.			
10	Verify that the control and alarm settings for temperature indicators are as specified.			
11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.			

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

1. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	NOT OK	The room and transformer must be clean
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual).	OK	
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

#	Description	Result	Remark
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	
1.12	Verify correct liquid level and oil level indicators.	OK	
1.13	Inspect for any oil leaks.	OK	
1.14	Ensure all drain valves are fully closed	OK	
1.15	Verify the installation of the pressure relief valve.	OK	
1.16	Check Silica Gel installation, level and color.	OK	
1.17	Check Buckloz relay physical condition and assembly.	OK	

2. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	OK	
2.3	Verify the operation of tap changer (On load/ off load) if any.	OK	On load

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

2.4 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/15Sec	Remarks
			15 Sec	60 Sec		
1	HV-(LV+E)	5000	17.92 GΩ	24.02 GΩ	1.34	
2	HV-LV	2500	32.00 GΩ	43.02 GΩ	1.34	
3	LV-(HV+E)	1000	6.13 GΩ	14.28 GΩ	2.32	

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

2.5 Turns ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	391.2	388.6	391.3	211.4	212.8	212.4	1.83962	0.34273
2	390.1	390.2	390.4	215.4	214.9	215.4	1.81307	0.02733
3	390.9	389.7	391.3	218.3	217.4	217.6	1.79382	0.11996
4	387.5	388.7	389	218.5	218.6	219.3	1.77514	0.23875
5	387.3	389.2	390.2	221.4	221.2	222	1.75549	0.31383
6	386.8	388.3	389.8	223.7	223.8	224.5	1.73348	0.24518
7	388	388.4	389.3	226.8	226.5	227.6	1.712	0.21457
8	386.9	388.5	387	229.4	229.2	230.1	1.68782	0.01433
9A/B/C	386.6	388.3	387.9	232.4	232.2	233.2	1.66638	0.01719
10	386.3	388.2	388.9	234.8	234.6	235.8	1.64974	0.23304
11	385.4	387.9	387.9	237.5	237.7	238.4	1.62724	0.13798
12	387.6	388.1	388.3	241.5	241.2	242.2	1.60574	0.09327
13	384.3	391.2	385.3	244.6	244.4	245	1.58147	0.11759
14	383.8	385.8	390.5	247.3	247.7	248.5	1.56032	0.14418
15	387.6	388.8	384.7	251.2	251.3	252.1	1.5387	0.19269
16	388.1	390.2	389	254.9	254.7	255.4	1.52588	0.32699
17	386.7	388.9	389.5	258.2	258.3	259.2	1.502	0.13321

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio}-\text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.6 Phase Rotation Check

	Phase1	Phase2	Phase3
Secondary voltage			

	L 1-2	L 2-3	L 3-1
Secondary voltage			

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

2.7 Function operation test

Temperature sensor/relay

#	Description	Result / value	Remark
1	Alarm Set Value	OK	
2	Check Cooling Fan Operation	N/A	
3	Trip set Value	OK	
4	Check Upstream Trip	OK	
5	Check Wiring Connection	OK	Internal only

Buchloz relay

#	Description	Result / value	Remark
1	Alarm set value	OK	
2	Trip set value	OK	
3	Wiring Connection	OK	Internal only

Transformer operation

#	Description	Result / value	Remark
1	Oil low level alarm value	OK	
2	Oil low level trip value	OK	
3	Oil temperature alarm value	OK	
4	Oil temperature trip value	OK	
5	Winding temperature alarm value	OK	
6	Winding temperature trip value	OK	
7	Pressure relief alarm value	N/A	
8	Pressure relief trip value	OK	

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass 'N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	23/12/2020	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 2 (Area 031)**	Equip. Tag	031-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283178 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -529.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	07/2019	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	50-55k	Cooling oil lts/kg	4400
Total mass kG	15500	Energization date			

3. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Abd El Naby

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : POWER TRANSFORMER INSTALLATION

NOTIFICATION NO. : PTJ-ELE-RFI-185 DISCIPLINE : ELECTRICAL

DATE : : 5/2/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	POWER TRANSFORMER INSTALLATION		2-May-21				
1	030-SUB-PTR-1A						
2	030-SUB-PTR-1B						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

The Tank Conservator for Power Transformer PTR -1A is damaged and must be replaced by vendor.

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

POWER TRANSFORMER INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
		ITR-EL-0017	ELECTRICAL	

JOB DESCRIPTION		AREA DESCRIPTION	
Transformer No.		Serial No.	
System Voltage		Rating	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	The transformer room must be dry and clean, the flowing of the water must be prevented			✓
2	Adequate ventilation is to be provided for heat dissipation	✓		
3	For indoor installation care must be taken to place transformers at a distance from the wall in keeping with insulation level mentioned in the rating plate as well as the requirements stipulated in standards			✓
4	The spacing of the HV cables should be according to standards	✓		
5	If the LV/HV terminal is aluminum, The necessary precautions will be taken for the copper cable or copper bus bar connection	✓		
6	The connection cables for transformer auxiliary shall be fixed rigidly to cable channels adequately Isolated from active parts as per the requirements of standards	✓		
7	Check all the screws on HV coils and on LV connections, if necessary tighten according to the installation manual	✓		

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

® Islam Sharaf

Enppi EGPC CRUDE OIL TANK FARM EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : NER Panel Installation

NOTIFICATION NO. : PTJ-RFI-EL- 186 DISCIPLINE : ELECTRICAL

DATE : : 5/3/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	NER Panel Installation	AGROUD MODULE 1 SUB BUILDING	3-May-21				
1	030-SUB-NER-1A						
2	030-SUB-NER-1B						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

030. SUB. NER- 1B - must be fixed (Bolts tighten) (Done)

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

LVSWG AND PANEL INSTALLATION

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	DOUCUMENT No	DISPLINE	SHEET NO
PTJ-ELE-RFI-		ITR-EL-0012	ELECTRICAL	

JOB DESCRIPTION	AREA DESCRIPTION
	AGROUD MODULE / SUB BUILDING

Tag No		Serial No.	

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Verify that equipment name plates are according to the corresponding drawing	✓		
2	Inspect physical and mechanical condition of the equipment and all components for clear damage	✓		
3	Verify appropriate anchorage, required area clearances, physical damage, and correct alignment and cleanliness	✓	✓	
4	Inspect all doors, panels, and sections for paint, dents, scratches, fit, and missing hardware	✓		
5	Verify that the barriers and covers are installed correctly			✓
6	Verify that filters are in place and all ventilation openings are clear from any kind of obstacles			✓
7	Verify that main bus bar is connected between the cells			✓
8	Verify that the earth bar is connected between the cells and connected to the earth		✓	
9	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method			✓
10	After tightening each electrical connection to the appropriate torque, apply some Varnish between the nut and the screw (or else , between the screw's			✓
11	Confirm that lubricants have been correctly applied at the recommended locations			✓
12	Inspect all mechanical indicating devices for correct operation			✓
13	Verify that draw out disconnecting contacts and interlocks function correctly			✓
14	Verify that fuse and/or circuit breaker size and type correspond to drawings			✓
15	Verify that current and potential transformer ratios correspond to drawings			✓
16	Verify that all the interconnection control wires between the cells have been made correctly reference to the control drawings			✓
17	Verify that customer connections to remote power, operators, interlocks, and indicators have been made			✓

REMARKS:

REFERENCE DOCUMENTS:

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001
Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 208 DISCIPLINE : ELEC

DATE : : 02/06/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
35	P2-030-SUB-PTR-1A	SUBSTATION					
36	P1-030-SUB-PTR-1B	SUBSTATION					
37	P2-030-SUB-PTR-1B	SUBSTATION					
38	P1-030-SUB-HVSWG-11	SUBSTATION					
39	C8-030-SUB-HVSWG-6.6A	SUBSTATION					
40	C8-030-SUB-HVSWG-6.6B	SUBSTATION					
41	C9-030-SUB-HVSWG-6.6A	SUBSTATION					
42	C10-030-SUB-HVSWG-6.6A	SUBSTATION					
43	C9-030-SUB-HVSWG-6.6B	SUBSTATION					
44	C10-030-SUB-HVSWG-6.6B	SUBSTATION					
45							
46							
47							
48							
49							
50							
51							
52							
53							

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hassan	Islam Sherif	
SIGNATURE			
DATE	6/6/2021		

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 208 DISCIPLINE : ELEC

DATE : : 02/06/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
1	C1-030-SUB-AVR-1A	SUBSTATION					
2	C2-030-SUB-PTR-1A	SUBSTATION					
3	C1-030-SUB-AVR-1B	SUBSTATION					
4	C2-030-SUB-PTR-1B	SUBSTATION					
5	✓C1-030-SUB-HVSWG-6.6A	SUBSTATION					
6	C2-030-SUB-HVSWG-6.6A	SUBSTATION					
7	C3-030-SUB-HVSWG-6.6A	SUBSTATION					
8	C4-030-SUB-HVSWG-6.6A	SUBSTATION					
9	✓C5-030-SUB-HVSWG-6.6A	SUBSTATION					
10	✓C1-030-SUB-HVSWG-6.6B	SUBSTATION					
11	C2-030-SUB-HVSWG-6.6B	SUBSTATION					
12	C3-030-SUB-HVSWG-6.6B	SUBSTATION					
13	C4-030-SUB-HVSWG-6.6B	SUBSTATION					
14	✓C5-030-SUB-HVSWG-6.6B	SUBSTATION					
15	C1-030-SUB-LVSWG-1A	SUBSTATION					
16	C1-030-SUB-LVSWG-1B	SUBSTATION					
17	C1-030-PM-04A	SUBSTATION					

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME	Ahmed Hassan	Islam Sherif	
SIGNATURE			
DATE	6/6/2021		

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001
Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 208 DISCIPLINE : ELEC

DATE : : 02/06/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
18	C1-030-PM-04B	SUBSTATION					
19	C1-030-PM-05A	SUBSTATION					
20	C1-030-PM-05B	SUBSTATION					
21	C3-030-SUB-AVR-1A	SUBSTATION					
22	C3-030-SUB-AVR-1B	SUBSTATION					
23	P1-030-SUB-TR-1A	SUBSTATION					
24	P1-030-SUB-TR-1B	SUBSTATION					
25	P1-030-LPDP-CR-1	SUBSTATION					
26	P1-030-LPDP-CR-2	SUBSTATION					
27	P1-030-LPDP-CR-3	SUBSTATION					
28	C6-030-SUB-HVSWG-6.6A	SUBSTATION					
29	C6-030-SUB-HVSWG-6.6B	SUBSTATION					
30	C2-030-SUB-LVSWG-1A	SUBSTATION					
31	C2-030-SUB-LVSWG-1B	SUBSTATION					
32	P1-030-SUB-NER-1A	SUBSTATION					
33	P1-030-SUB-NER-1B	SUBSTATION					
34	P1-030-SUB-PTR-1A	SUBSTATION					

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :	Ahmed Hussan		
SIGNATURE		® Islam Sherif	
DATE	6/6/2021		

Enppi PETROJET

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
PTJ-ELE-RFI-	02/06/2021	ITR-EL-0009	ELEC	1 OF 1

Item/Tag NO.	For All Cables tages in PTJ-ELE-RFI-				
Type :-		Core:		Size:	

NO.	Description of check	RESUNT ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *'	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *''	✗		✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.			✓

Remarks :

*' : ITR-EL-006A/B

*'' :ITR-EL-008

	PETROJET	ENPPI	PMC
NAME	Ahmed Hassan	Islam Sherif	
SIGNATURE			
DATE	6/6/2021		

ITR-EL-0009

Enppi / PETROJET	EGPC CRUDE OIL TANK FARM	EGPC

Owner :	Egyptian General Petroleum Corporation (EGPC)	Project No: 01251-100-030 :01251-100-031
Contractor	CONSORTIUM (ENPPI / PETROJET)	Document No: ITR-QC-0001 Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND SPLICING

NOTIFICATION NO. : PTJ-INS-RFI- 206 DISCIPLINE : E&I

DATE : : 5/24/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	CABLE TERMINATIN AND SPLICING	MODULE 1	24-May-21				
1	P/1-030-SUB-PTR-1A						
2	P/2-030-SUB-PTR-1A						
3	P/3-030-SUB-PTR-1A						
4	G1-030-SUB-NER-1A						
5	P/1-030-SUB-PTR-1B						
6	P/2-030-SUB-PTR-1B						
7	P/3-030-SUB-PTR-1B						
8	G1-030-SUB-NER-1B						
9	P/1-030-SUB-HVSWG-6.6A						
10	P/2-030-SUB-HVSWG-6.6A						
11	P/3-030-SUB-HVSWG-6.6A						
12	P/4-030-SUB-HVSWG-6.6A						
13	P/1-030-SUB-HVSWG-6.6B						
14	P/2-030-SUB-HVSWG-6.6B						
15	P/3-030-SUB-HVSWG-6.6B						
16	P/4-030-SUB-HVSWG-6.6B						
17	P-030-SUB-TR-1A						
18	P-030-SUB-TR-1B						
19	P-030-EPM2-TR-1						

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. Omar
DATE			

Enppi PETROJET

EGPC CRUDE OIL TANK FARM

EGPC

INSPECTION AND TEST REPORT FOR

CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
RFI-206		ITR-EL-0009	ELEC	1 OF 1

Item/Tag NO.					
Type :-		Core:		Size:	

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *'	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *''	✓		
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications			✓
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			M. omar
DATE			

Enppi

EGPC CRUDE OIL TANK FARM

EGPC

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001
Revision No. : 00

REQUEST FOR INSPECTION

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- DISCIPLINE : ELEC

DATE : : 27/03/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
35	D-030-SUB-LVSWG-1B	SUBSTATION					
36	D-030-SUB-IRP-1	SUBSTATION					
37	P1-030-SUB-LVSWG-1A	SUBSTATION					
38	P1-030-SUB-LVSWG-1B	SUBSTATION					
39	C1-030-SUB-ACUPS-1	SUBSTATION					
40	C2-030-SUB-ACUPS-1	SUBSTATION					
41	C1-030-SUB-DCUPS-1	SUBSTATION					
42	C2-030-SUB-DCUPS-1	SUBSTATION					
43	P-030-SUB-AVR-1A	SUBSTATION					
44	P-030-SUB-AVR-1B	SUBSTATION					
45	P1-030-SUB-DCUPS-1	SUBSTATION					
46	P-030-SUB-UPDP-1	SUBSTATION					
47	P-030-SUB-DCUPS-1A	SUBSTATION					
48	P-030-SUB-DCUPS-1B	SUBSTATION					

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

Enppi	EGPC CRUDE OIL TANK FARM	EGPC

INSPECTION AND TEST REPORT FOR

CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER	INSPECTION DATE & TIME	ITR NUMBER	DISPLINE	SHEET NO
PTJ-ELE-RFI-	27/03/2021	ITR-EL-0009	ELEC	1 OF 1

Item/Tag NO.	For All Cables tages in PTJ-ELE-RFI-				
Type :-		Core:		Size:	

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *'	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *''			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		✓
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

*' : ITR-EL-006A/B

*'' :ITR-EL-008

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.08- FAT Reports & Certificates

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.09- SAT Reports & Certificates

30EL-001

2 Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

1. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	NOT OK	The room and transformer must be clean
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual).	OK	
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar.

Customer(Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

#	Description	Result	Remark
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	
1.12	Verify correct liquid level and oil level indicators.	OK	
1.13	Inspect for any oil leaks.	Not OK	Oil leak from conservator still under Schneider investigation to solve this problem *
1.14	Ensure all drain valves are fully closed	OK	
1.15	Verify the installation of the pressure relief valve.	OK	
1.16	Check Silica Gel installation, level and color.	OK	
1.17	Check Buckloz relay physical condition and assembly.	OK	

2. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	OK	
2.3	Verify the operation of tap changer (On load/ off load) if any.	OK	On load

Comments: * new Conservator was provided by Schneider and installed/tested by Schneider rep. during the period from 28 to 30/8/2021 and test results are successful and Tr. Can be put in service

Client (PPC): Mohamed Ibrahim for. M. omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

31/8/2021

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.4 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	12.82 GΩ	14.98 GΩ	1.16	
2	HV-LV	2500	18.74 GΩ	23.33 GΩ	1.24	
3	LV-(HV+E)	1000	8.08 GΩ	12.69GΩ	1.57	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.5 Turns ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.4	403.6	402.2	219.5	219.4	219.1	1.83617	-0.15473887
2	402.6	403	402.3	222	221.9	221.7	1.81475	-0.12015212
3	402.6	403	402.3	224.6	224.5	224.2	1.794	-0.13021597
4	402.6	403	402.3	227.3	227.1	226.9	1.77293	-0.11434837
5	402.5	403	402.3	230	229.8	229.6	1.75196	-0.11189854
6	402.6	403	402.3	232.7	232.6	232.3	1.73151	-0.1310171
7	402.6	403	402.3	235.6	235.4	235.2	1.71042	-0.12226205
8	402.5	403	402.3	238.5	238.4	238.1	1.68923	-0.09807036
9A/B/C	402.6	403	402.3	241.5	241.3	241.1	1.6686	-0.15473887
10	402.5	403	402.3	244.5	244.4	244.1	1.64775	-0.11178539
11	402.6	403	402.3	247.7	247.5	247.2	1.62702	-0.12433687
12	402.6	403	402.4	250.9	250.7	250.4	1.60638	-0.13343086
13	402.5	403	402.3	254.2	254	253.7	1.58525	-0.12088891
14	402.5	403	402.3	257.5	257.4	257.1	1.56451	-0.12364293
15	402.6	403	402.3	261.1	261	260.6	1.54325	-0.10255560
16	402.6	403	402.3	264.6	264.5	264.2	1.52263	-0.11295285
17	402.6	403	402.3	268.3	268.1	267,9	1.5018	-0.12018732

Comments:

Client (PPC): Mohamed Ibrahim for. M. Omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.6 Phase Rotation Check

	Phase1	Phase2	Phase3
Secondary voltage	N/A	N/A	N/A

	L 1-2	L 2-3	L 3-1
Secondary voltage	N/A	N/A	N/A

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer(Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.7 Function operation test

Temperature sensor/relay

#	Description	Result / value	Remark
1	Alarm Set Value	OK	
2	Check Cooling Fan Operation	N/A	
3	Trip set Value	OK	
4	Check Upstream Trip	OK	
5	Check Wiring Connection	OK	Internal only

Buchloz relay

#	Description	Result / value	Remark
1	Alarm set value	OK	
2	Trip set value	OK	
3	Wiring Connection	OK	Internal only

Transformer operation

#	Description	Result / value	Remark
1	Oil low level alarm value	OK	MAX
2	Oil low level trip value	OK	MIN
3	Oil temperature alarm value	OK	90 °C
4	Oil temperature trip value	OK	100°C
5	Winding temperature alarm value	OK	110°C
6	Winding temperature trip value	OK	120°C
7	Pressure relief alarm value	N/A	
8	Pressure relief trip value	OK	0.70 Bar

Comments:

Client (PPC): Mohamed Ibrahim

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

3. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

1. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	NOT OK	The room and transformer must be clean
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual).	OK	
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

#	Description	Result	Remark
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	
1.12	Verify correct liquid level and oil level indicators.	OK	
1.13	Inspect for any oil leaks.	OK	
1.14	Ensure all drain valves are fully closed	OK	
1.15	Verify the installation of the pressure relief valve.	OK	
1.16	Check Silica Gel installation, level and color.	OK	
1.17	Check Buckloz relay physical condition and assembly.	OK	

2. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	OK	
2.3	Verify the operation of tap changer (On load/ off load) if any.	OK	On load

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem A.Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.4 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	18 GΩ	26.37 GΩ	1.46	
2	HV-LV	2500	25 GΩ	32.21 GΩ	1.28	
3	LV-(HV+E)	1000	9.31GΩ	13.34 GΩ	1.43	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio}-\text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.6 Phase Rotation Check

	Phase1	Phase2	Phase3
Secondary voltage	N/A	N/A	N/A

	L 1-2	L 2-3	L 3-1
Secondary voltage	N/A	N/A	N/A

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.5 Turns ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.5	402.8	402.3	219.4	219.3	219.1	1.83582	-0.135437685
2	402.5	402.8	402.2	222	221.9	221.6	1.81443	-0.102036375
3	402.5	402.8	402.1	224.5	224.3	224.1	1.79432	-0.148264886
4	402.4	402.8	402.1	227.1	227	226.7	1.77335	-0.138109049
5	402.4	402.8	402.1	229.8	229.7	229.4	1.7525	-0.14308525
6	402.4	402.8	402.1	232.6	232.5	232.2	1.73139	-0.124337092
7	402.4	402.8	402.1	235.4	235.3	235	1.71078	-0.143431362
8	402.4	402.8	402.1	238.4	238.2	238	1.68948	-0.112639252
9A/B/C	402.4	402.8	402.1	241.4	241.2	241	1.66846	-0.107794362
10	402.4	402.8	402.1	244.4	244.2	244	1.64797	-0.124979992
11	402.4	402.8	402.1	247.6	247.4	247.1	1.62687	-0.115058099
12	402.4	402.8	402.1	250.8	250.6	250.3	1.60609	-0.115346155
13	402.4	402.8	402.1	254.1	253.9	253.6	1.58522	-0.118863335
14	402.4	402.8	402.1	257.5	257.3	257.3	1.56366	-0.069231826
15	402.4	402.8	402.1	260.9	260.8	260.5	1.54347	-0.116787716
16	402.5	402.9	402.2	264.5	264.4	264	1.52302	-0.13858047
17	402.5	402.9	402.3	268.2	268.1	267.7	1.50211	-0.140961857

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.7 Function operation test

Temperature sensor/relay

#	Description	Result / value	Remark
1	Alarm Set Value	OK	
2	Check Cooling Fan Operation	N/A	
3	Trip set Value	OK	
4	Check Upstream Trip	OK	
5	Check Wiring Connection	OK	Internal only

Buchloz relay

#	Description	Result / value	Remark
1	Alarm set value	OK	
2	Trip set value	OK	
3	Wiring Connection	OK	Internal only

Transformer operation

#	Description	Result / value	Remark
1	Oil low level alarm value	OK	MAX
2	Oil low level trip value	OK	MIN
3	Oil temperature alarm value	OK	90°C
4	Oil temperature trip value	OK	100°C
5	Winding temperature alarm value	OK	110°C
6	Winding temperature trip value	OK	120°C
7	Pressure relief alarm value	N/A	
8	Pressure relief trip value	OK	0.70 Bar

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Internal

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	**Agrood 1 (Area 030)**	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

3. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

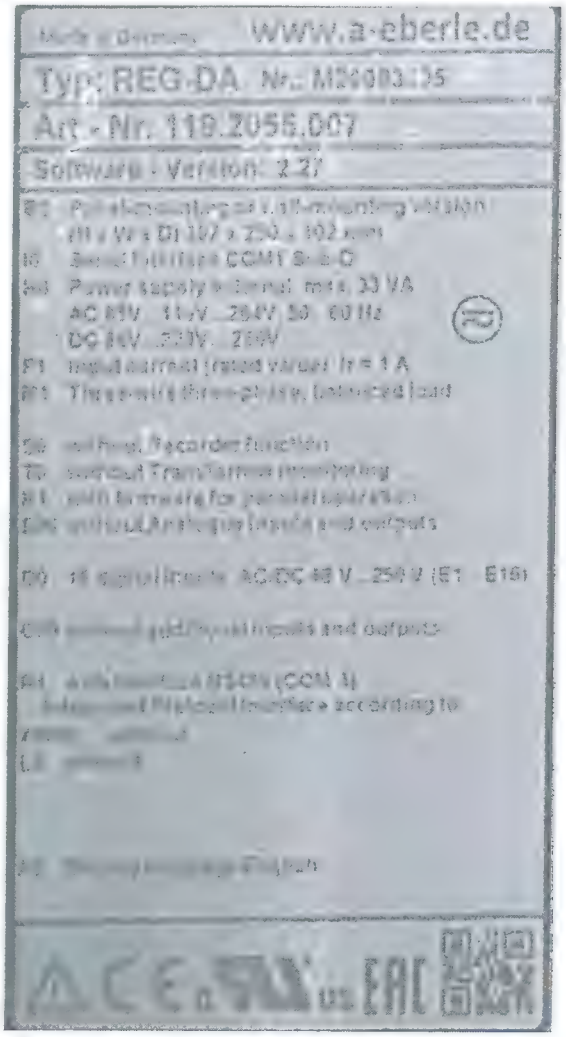
Internal

30GL-01

TECHNO MASTER	AVR Testing and Commissioning Report	Schneider Electric
Project name: Agrood – Suez	AVR (1) Serial No: M20063395	Date : 22/12/2020

Site Commissioning for AVR of Power Transformer 8 MVA 11 / 6.6 KV

TECHNO MASTER C.R 40980 El laselky st.Maadi - Cairo - Egypt



Tested by: Ahmed Ibrahim	Witnessed by: A. Nadeem	Witnessed by: Mohamed Ibrahim	Page 1 of 4
Signature: Ahmed Ibrahim	Signature A. Nade	Signature	

AVR SITE COMMISSIONING

1. AVR TEST REPORT

- **Test objective:**
  Checking the AVR manual/auto operations, and check the limit values of the AVR (overcurrent block, under voltage block, and over voltage block).

- **Procedure:**
  1. the manual operation of the AVR (raise & lower)
  2. Apply voltage equal to the desired value, AVR should not react.
  3. Apply voltage greater than the desired value by more than 4%, AVR should LOWER the voltage (as raise a tap) after Tl=60 seconds.
  4. Apply voltage less than the desired value by more than 4%, AVR should RAISE the voltage (as lower a tap) after Tl=60 seconds.
  5. Apply voltage greater than the over voltage limit value (110%), AVR should be blocked.
  6. Apply voltage less than the under-voltage limit value (90%), AVR should be blocked.
  7. Apply voltage greater than the desired value by more than 4%, in the same time inject current more than the overcurrent limit value (100%), AVR should be blocked.
  8. Record all the results.

TECHNOMASTER C.R 40980 El Iaselky st.Maadi - Cairo - Egypt

1. Setting

Item	Value
Set point of Primary Voltage	6.6 KV
Set point of Secondary Voltage	110 V
Desired Value	+/- 4%
T1	60 Sec.
T2	10 Sec.
Over Voltage	10%
Under Voltage	-10 %
Over Current	110 %

2. Programmable Led

No	Item	Remark
1	Remote	OK
2	Local	OK
3	< V	OK
4	>V	OK
5	Inh. High	OK
6	Inh. Low	OK
7	Par.prog	Ok
8	Tc in prog	Ok
9	Up	Ok
10	Down	Ok
11	>I	Ok

3. Manual operation is working properly input and Output as Scheme during carry out Function

TECHNOMASTER C.R 40980 El Iaselky st.Maadi - Cairo - Egypt

4. Automatic operation

a. Measurement:

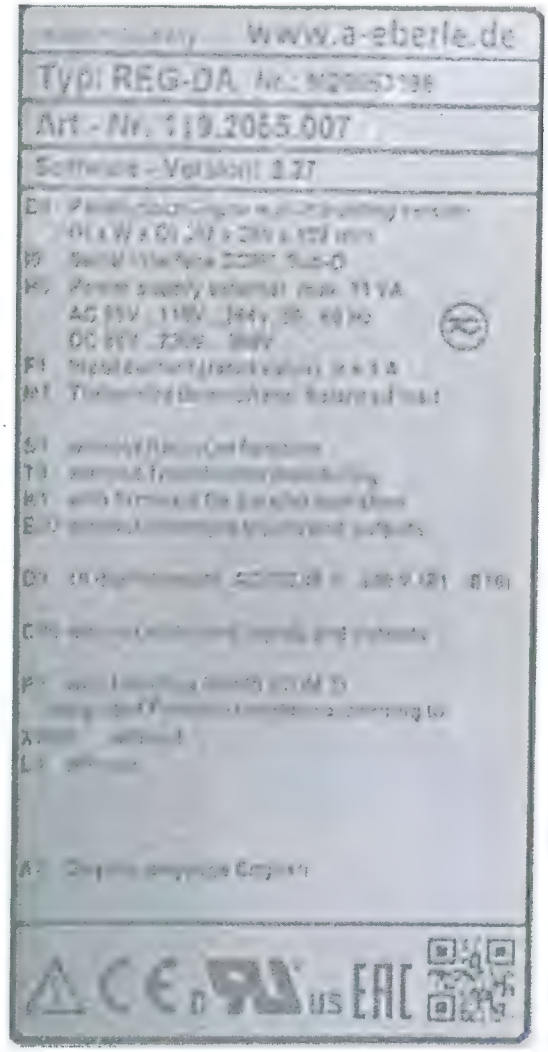
Applied voltage (V)	Reading voltage (KV)	Applied current (A)	Reading Current (A)
63.5	6.597	5	1252

a. Test Results:

Applied voltage (V)	Applied current (A)	AVR behavior	Result
63.5	5	No reaction	OK
67	5	Raise a tap after Tl=60 sec so on.	OK
60	5	Lower a tap after Tl=60 sec so on.	OK
55	5	AVR blocked due to UNDER-VOLTAGE	OK
70	5	AVR blocked due to OVER-VOLTAGE	OK
63.5	6	AVR blocked due to OVER-CURRENT	OK

TECHNOMASTER C.R 40980 El laselky st.Maadi - Cairo - Egypt

Site Commissioning for AVR of Power Transformer 8 MVA 11 / 6.6 KV



Tested by: Ahmed Ibrahim	Witnessed by: A. Nadeem	Witnessed by: Mohamed Abd Elghany	
Signature: Ahmed Ibrahim	Signature	Signature	Page 1 of 4

AVR SITE COMMISSIONING

1. AVR TEST REPORT

- **Test objective:**
  Checking the AVR manual/auto operations, and check the limit values of the AVR (overcurrent block, under voltage block, and over voltage block).

- **Procedure:**
  1. the manual operation of the AVR (raise & lower)
  2. Apply voltage equal to the desired value, AVR should not react.
  3. Apply voltage greater than the desired value by more than 4%, AVR should LOWER the voltage (as raise a tap) after Tl=60 seconds.
  4. Apply voltage less than the desired value by more than 4%, AVR should RAISE the voltage (as lower a tap) after Tl=60 seconds.
  5. Apply voltage greater than the over voltage limit value (110%), AVR should be blocked.
  6. Apply voltage less than the under-voltage limit value (90%), AVR should be blocked.
  7. Apply voltage greater than the desired value by more than 4%, in the same time inject current more than the overcurrent limit value (100%), AVR should be blocked.
  8. Record all the results.

TECHNOMASTER C.R 40980 El Iaselky st.Maadi - Cairo - Egypt

1. Setting

Item	Value
Set point of Primary Voltage	6.6 KV
Set point of Secondary Voltage	110 V
Desired Value	+/- 4%
T1	60 Sec.
T2	10 Sec.
Over Voltage	10%
Under Voltage	-10 %
Over Current	110 %

2. Programmable Led

No	Item	Remark
1	Remote	OK
2	Local	OK
3	< V	OK
4	>V	OK
5	Inh. High	OK
6	Inh. Low	OK
7	Par.prog	Ok
8	Tc in prog	Ok
9	Up	Ok
10	Down	Ok
11	>I	Ok

3. Manual operation is working properly input and Output as Scheme during carry out Function

TECHNOMASTER C.R 40980 El Iaselky st.Maadi - Cairo - Egypt

4. Automatic operation

a. Measurement:

Applied voltage (V)	Reading voltage (KV)	Applied current (A)	Reading Current (A)
63.5	6.597	5	1252

a. Test Results:

Applied voltage (V)	Applied current (A)	AVR behavior	Result
63.5	5	No reaction	OK
67	5	Raise a tap after Tl=60 sec so on.	OK
60	5	Lower a tap after Tl=60 sec so on.	OK
55	5	AVR blocked due to UNDER-VOLTAGE	OK
70	5	AVR blocked due to OVER-VOLTAGE	OK
63.5	6	AVR blocked due to OVER-CURRENT	OK

TECHNOMASTER C.R 40980 El Iasalky st.Maadi - Cairo - Egypt

2 Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

1. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	NOT OK	The room and transformer must be clean
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual).	OK	
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

#	Description	Result	Remark
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	
1.12	Verify correct liquid level and oil level indicators.	OK	
1.13	Inspect for any oil leaks.	Not OK	Oil leak from conservator still under Schneider investigation to solve this problem *
1.14	Ensure all drain valves are fully closed	OK	
1.15	Verify the installation of the pressure relief valve.	OK	
1.16	Check Silica Gel installation, level and color.	OK	
1.17	Check Buckloz relay physical condition and assembly.	OK	

2. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	OK	
2.3	Verify the operation of tap changer (On load/ off load) if any.	OK	On load

Comments: * new Conservator was provided by Schneider and installed / tested by Schneider rep. during the period from 28 to 30/8/2021 and test results are successful and Tr. Can be put in service

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem A. Nadeem 31/8/2021

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.4 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	12.82 GΩ	14.98 GΩ	1.16	
2	HV-LV	2500	18.74 GΩ	23.33 GΩ	1.24	
3	LV-(HV+E)	1000	8.08 GΩ	12.69GΩ	1.57	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.5 Turns ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.4	403.6	402.2	219.5	219.4	219.1	1.83617	-0.15473887
2	402.6	403	402.3	222	221.9	221.7	1.81475	-0.12015212
3	402.6	403	402.3	224.6	224.5	224.2	1.794	-0.13021597
4	402.6	403	402.3	227.3	227.1	226.9	1.77293	-0.11434837
5	402.5	403	402.3	230	229.8	229.6	1.75196	-0.11189854
6	402.6	403	402.3	232.7	232.6	232.3	1.73151	-0.1310171
7	402.6	403	402.3	235.6	235.4	235.2	1.71042	-0.12226205
8	402.5	403	402.3	238.5	238.4	238.1	1.68923	-0.09807036
9A/B/C	402.6	403	402.3	241.5	241.3	241.1	1.6686	-0.15473887
10	402.5	403	402.3	244.5	244.4	244.1	1.64775	-0.11178539
11	402.6	403	402.3	247.7	247.5	247.2	1.62702	-0.12433687
12	402.6	403	402.4	250.9	250.7	250.4	1.60638	-0.13343086
13	402.5	403	402.3	254.2	254	253.7	1.58525	-0.12088891
14	402.5	403	402.3	257.5	257.4	257.1	1.56451	-0.12364293
15	402.6	403	402.3	261.1	261	260.6	1.54325	-0.10255560
16	402.6	403	402.3	264.6	264.5	264.2	1.52263	-0.11295285
17	402.6	403	402.3	268.3	268.1	267,9	1.5018	-0.12018732

Comments:

Client (PPC): Mohamed Ibrahim for. M. Omar

Customer(Enppi): Ahmed Nadeem Abdo

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E99-0001	Site Location	Sue.
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio =$(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3})$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.6 Phase Rotation Check

Secondary voltage	Phase1	Phase2	Phase3
	N/A	N/A	N/A

Secondary voltage	L 1-2	L 2-3	L 3-1
	N/A	N/A	N/A

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer(Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

2.7 Function operation test

Temperature sensor/relay

#	Description	Result / value	Remark
1	Alarm Set Value	OK	
2	Check Cooling Fan Operation	N/A	
3	Trip set Value	OK	
4	Check Upstream Trip	OK	
5	Check Wiring Connection	OK	Internal only

Buchloz relay

#	Description	Result / value	Remark
1	Alarm set value	OK	
2	Trip set value	OK	
3	Wiring Connection	OK	Internal only

Transformer operation

#	Description	Result / value	Remark
1	Oil low level alarm value	OK	MAX
2	Oil low level trip value	OK	MIN
3	Oil temperature alarm value	OK	90 °C
4	Oil temperature trip value	OK	100°C
5	Winding temperature alarm value	OK	110°C
6	Winding temperature trip value	OK	120°C
7	Pressure relief alarm value	N/A	
8	Pressure relief trip value	OK	0.70 Bar

Comments:

Client (PPC): Mohamed Ibrahim

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1A
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283175 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.85	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20500	Energization date			

3. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer(Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02 09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B.
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

1. Pre-commissioning inspection

#	Description	Result	Remark
1.1	Verify that equipment name plates are according to the corresponding drawings.	OK	
1.2	Make a close examination for shipping brackets or fixtures that may not have been removed during installation.	OK	
1.3	Verify appropriate anchorage, fixation, required area clearances, physical damage, and cleanliness.	NOT OK	The room and transformer must be clean
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage specially at bushing areas.	OK	
1.5	Verify that the installation ground is correctly leveled.	OK	
1.6	Verify the tightness of accessible bolted electrical connections using the calibrated torque-wrench method.	OK	
1.7	Verify that fixed tap connections are as per the drawings.	OK	
1.8	Check CT's ratings and polarity (Visual).	OK	
1.9	Verify connection of all alarm, control, and trip circuits for temperature, pressure relief device, pressure fault relay and any other if found.	OK	
1.10	Verify that the control and alarm settings for temperature indicators are as specified.	OK	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

#	Description	Result	Remark
1.11	Verify that customer connections to remote power, operators, interlocks, and indicators have been made.	OK	
1.12	Verify correct liquid level and oil level indicators.	OK	
1.13	Inspect for any oil leaks.	OK	
1.14	Ensure all drain valves are fully closed	OK	
1.15	Verify the installation of the pressure relief valve.	OK	
1.16	Check Silica Gel installation, level and color.	OK	
1.17	Check Buckloz relay physical condition and assembly.	OK	

2. Commissioning checks

#	Description	Result	Remark
2.1	Availability of the required auxiliary supply for control operation.	OK	
2.2	Cooling system operate correctly and check temperature module settings (If found).	OK	
2.3	Verify the operation of tap changer (On load/ off load) if any.	OK	On load

Comments:

Client (PPC): Mohamed Ibrahim For. M.omar

Customer (Enppi): Ahmed Nadeem A.Nadeem

Schneider rep.: Khamis Ramadan

Legend

"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Schneider Electric	transformers testing and commissioning check list	Ref: TR-CK-02 Rev: 02.09/2018

Date	14/6/2021	Order Number	E99 0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.4 Insulation resistance test for the winding

#	Connection	Test Voltage in DC Volts	Resistance in GΩ		DAR Value 60Sec/30Sec	Remarks
			30 Sec	60 Sec		
1	HV-(LV+E)	5000	18 GΩ	26.37 GΩ	1.46	
2	HV-LV	2500	25 GΩ	32.21 GΩ	1.28	
3	LV-(HV+E)	1000	9.31GΩ	13.34 GΩ	1.43	

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem A. Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E90-0801	Site Location	Suez
Customer	Enppi	Project	Agreed 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

- Applied voltage connected only on primary windings
- Applied voltage should be stable
- Real ratio = $\frac{\text{Rated Voltage Primary}}{\text{Rated Voltage Secondary}}$
- Measured ratio = $\left(\frac{RY+YB+BR)}{3} / \frac{ry+yb+br}{3}\right)$
- Error = $\frac{\text{Real Ratio} - \text{Measured Ratio}}{\text{Real Ration}} \times 100$
- Test is enough on only one tap position

2.6 Phase Rotation Check

Secondary voltage	Phase1	Phase2	Phase3
	N/A	N/A	N/A

Secondary voltage	L 1-2	L 2-3	L 3-1
	N/A	N/A	N/A

N.B: Secondary Line Voltage must not be greater than 415 VA

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB-PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.5 Turns ratio test

Tap Position	HV Applied volts (V)			LV Measured volts (V)			Measured Ratio	Error
	RY	YB	BR	ry	yb	br		
1	402.5	402.8	402.3	219.4	219.3	219.1	1.83582	-0.135437685
2	402.5	402.8	402.2	222	221.9	221.6	1.81443	-0.102036375
3	402.5	402.8	402.1	224.5	224.3	224.1	1.79432	-0.148264886
4	402.4	402.8	402.1	227.1	227	226.7	1.77335	-0.138109049
5	402.4	402.8	402.1	229.8	229.7	229.4	1.7525	-0.14308525
6	402.4	402.8	402.1	232.6	232.5	232.2	1.73139	-0.124337092
7	402.4	402.8	402.1	235.4	235.3	235	1.71078	-0.143431362
8	402.4	402.8	402.1	238.4	238.2	238	1.68948	-0.112639252
9A/B/C	402.4	402.8	402.1	241.4	241.2	241	1.66846	-0.107794362
10	402.4	402.8	402.1	244.4	244.2	244	1.64797	-0.124979992
11	402.4	402.8	402.1	247.6	247.4	247.1	1.62687	-0.115058099
12	402.4	402.8	402.1	250.8	250.6	250.3	1.60609	-0.115346155
13	402.4	402.8	402.1	254.1	253.9	253.6	1.58522	-0.118863335
14	402.4	402.8	402.1	257.5	257.3	257.3	1.56366	-0.069231826
15	402.4	402.8	402.1	260.9	260.8	260.5	1.54347	-0.116787716
16	402.5	402.9	402.2	264.5	264.4	264	1.52302	-0.13858047
17	402.5	402.9	402.3	268.2	268.1	267.7	1.50211	-0.140961857

Comments:

Client (PPC): Mohamed Ibrahim For. M. omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

2.7 Function operation test

Temperature sensor/relay

#	Description	Result / value	Remark
1	Alarm Set Value	OK	
2	Check Cooling Fan Operation	N/A	
3	Trip set Value	OK	
4	Check Upstream Trip	OK	
5	Check Wiring Connection	OK	Internal only

Buchloz relay

#	Description	Result / value	Remark
1	Alarm set value	OK	
2	Trip set value	OK	
3	Wiring Connection	OK	Internal only

Transformer operation

#	Description	Result / value	Remark
1	Oil low level alarm value	OK	MAX
2	Oil low level trip value	OK	MIN
3	Oil temperature alarm value	OK	90°C
4	Oil temperature trip value	OK	100°C
5	Winding temperature alarm value	OK	110°C
6	Winding temperature trip value	OK	120°C
7	Pressure relief alarm value	N/A	
8	Pressure relief trip value	OK	0.70 Bar

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Date	14/6/2021	Order Number	E99-0001	Site Location	Suez
Customer	Enppi	Project	Agrood 1 (Area 030)	Equip. Tag	030-SUB PTR-1B
Rated Power kVA	8000 -10.000	Service Voltage	11000/6600	TR Serial#	283176 - 01
Rated HV @ no-load	11000	Rated LV @ no-load	6600	Phases	3
Rated current - HV	419.9 -524.9	Rated current - LV	699.8 – 874.8	Frequency (Hz)	50
Cooling type	ONAN/ONAF	Manufacturing year	09/2020	Vector group	DYn11
Impedance Voltage %	7.82	Temp. rise oil/winding - °C	45-55k	Cooling oil lts/kg	4400
Total mass kG	20-500	Energization date			

3. Pre-energization checks

#	Description	Result	Remark
3.1	Check that transformer is clean and safe to energize.		
3.2	Check that Barriers, covers and shutters are installed in its place (if found).		
3.3	Verify correct equipment connection to earth link.		
3.4	Neutral connection to earth link.		
3.5	Check the primary and secondary connection status.		

Comments:

Client (PPC): Mohamed Ibrahim For. M. Omar

Customer (Enppi): Ahmed Nadeem

Schneider rep.: Khamis Ramadan

Legend
"Ok": Successfully passed "NOK": Didn't pass "N.A": Not applicable

Site Commissioning for AVR of Power Transformer 8 MVA 11 / 6.6 KV (TR-A)

TECHNO MASTER C.R 40990 El Haselky st Maadi - Cairo

Made in Germany www.a-eberle.de

Typ: REG-DA Nr.: M20063393

Art.- Nr. 119.2055.007

Software - Version: 2.27

B0 Panel-mounting or wall-mounting version
(H x W x D) 307 x 250 x 102 mm
I0 Serial Interface COM1 Sub-D
H0 Power supply external max. 33 W
AC 85V...110V...264V, 50...60 Hz
DC 88V...220V... 280V
F1 Input current (rated value) Ir = 1 A
M1 Three-wire three-phase; balanced load

S0 without Recorder function
T0 without Transformer monitoring
K1 with firmware for parallel operation
E00 without Analogue inputs and outputs

D0 16 digital inputs AC/DC 48 V...250 V (E1...E16)

C00 without additional inputs and outputs

R1 with interface RS485 (COM 3)
Integrated Protocol interface according to:
XW00 without
L0 without

A2 Display language English

AVR SITE COMMISSIONING

1. AVR TEST REPORT

- **Test objective:**
  Checking the AVR manual/auto operations, and check the limit values of the AVR (overcurrent block, under voltage block, and over voltage block).

- **Procedure:**
  1. the manual operation of the AVR (raise & lower)
  2. Apply voltage equal to the desired value, AVR should not react.
  3. Apply voltage greater than the desired value by more than 4%, AVR should LOWER the voltage (as lower a tap) after Tl=60 seconds.
  4. Apply voltage less than the desired value by more than 4%, AVR should RAISE the voltage (as raise a tap) after Tl=60 seconds.
  5. Apply voltage greater than the desired value by more than 8%, AVR should LOWER the voltage (as lower a tap) after T2=10 seconds.
  6. Apply voltage less than the desired value by more than 8%, AVR should RAISE the voltage (as raise a tap) after T2=10 seconds.
  7. Apply voltage greater than the over voltage limit value (110%), AVR should block and >V signal will appear after 3Sec. if the voltage stay at the same level for 4Sec more, inhibit high signal will appear.

8. Apply voltage less than the under-voltage limit value (90%), AVR should block and <V signal will appear after 3Sec. if the voltage stay at the same level for 4Sec more, inhibit low signal will appear.

9. Apply voltage greater or lower than the desired value by more than 4%, in the same time inject current more than the overcurrent limit value (110%), AVR should block and >I signal will appear instantanous.

10. Record all the results.

TECHNOMASTER C.R 40980 El Isaiky st Maadi - Cairo - Egypt

1. Setting

Item	Value
Set point of Primary Voltage	6.6 KV
Set point of Secondary Voltage	110 V
Desired Value	+/- 4%
T1	60 Sec.
T2	10 Sec.
Over Voltage	10%
Under Voltage	-10 %
Over Current	110 %

2. **Programmable Led**

No	Item	Remark
1	Remote	OK
2	Local	OK
3	< V	OK
4	>V	OK
5	Inh. High	OK
6	Inh. Low	OK
7	Par.prog	Ok
8	Tc in prog	Ok
9	Up	Ok
10	Down	Ok
11	>I	Ok

3. Manual operation is working properly input and Output as Scheme during carry out Function

TECHNOMASTER C.R 40980 El Iaselky st.Maadi - Cairo - Egypt

4. Automatic operation

a. Measurement:

Applied voltage (V)	Reading voltage (KV)	Applied current (A)	Reading Current (A)
63.5	6.597	5	1252

a. Test Results:

Applied voltage (V)	Applied current (A)	AVR behavior	Result
63.5	5	No reaction	OK
66.5	5	Lower a tap after Tl=60 sec so on.	OK
60.5	5	Raise a tap after Tl=60 sec so on.	OK
69	5	Lower a tap after T2=10 sec so on.	OK
58	5	Raise a tap after T2=10 sec so on.	OK
57	5	AVR blocked due to UNDER-VOLTAGE &Inhibit Low	OK
70	5	AVR blocked due to OVER-VOLTAGE &inhibit high	OK
66.5	5.6	AVR blocked due to OVER-CURRENT	OK
60.5	5.6	AVR blocked due to OVER-CURRENT	OK

TECHNOMASTER C.R 40980 Cairo - Egypt

Site Commissioning for AVR of Power Transformer 8 MVA 11 / 6.6 KV (TR-B)

TECHNO MASTER C.R 40980 El Sawky st Maadi - Cairo

www.a-eberle.de

Typ: REG-DA Nr.: M20063394

Art.- Nr. 119.2055.007

Software - Version: 2.27

B0 Panel-mounting or wall-mounting version
(H x W x D) 307 x 250 x 102 mm
I0 Serial Interface COM1 Sub-D
H0 Power supply external max. 33 VA
AC 85V...110V...264V, 50...60 Hz
DC 88V...220V... 280V
F1 Input current (rated value) Ir = 1 A
M1 Three-wire three-phase; balanced load

S0 without Recorder function
T0 without Transformer monitoring
X1 with Software for parallel operation
E00 without Analogue inputs and outputs

D0 16 digital inputs AC/DC 48 V...250 V (E1...E16)

C00 without additional inputs and outputs

R1 with interface RS485 (COM 3)
Integrated Protocol Interface according to
KNX/EIB Tunneling
L0 without

A2 Display language English

Tested by: Moustafa Elgendy	Witnessed by: Ahmed Nadeem	Witnessed by: Mohamed Ibrahim	
Company: TechnoMaster	Company: Enppi	Company: PPC	Page 1 of 5
Signature: M.Elgendy	Signature:	Signature: For: M. Omar	

AVR SITE COMMISSIONING

1. AVR TEST REPORT

- **Test objective:**
  Checking the AVR manual/auto operations, and check the limit values of the AVR (overcurrent block, under voltage block, and over voltage block).

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  4. Apply voltage less than the desired value by more than 4%, AVR should RAISE the voltage (as raise a tap) after Tl=60 seconds.
  5. Apply voltage greater than the desired value by more than 8%, AVR should LOWER the voltage (as lower a tap) after T2=10 seconds.
  6. Apply voltage less than the desired value by more than 8%, AVR should RAISE the voltage (as raise a tap) after T2=10 seconds.
  7. Apply voltage greater than the over voltage limit value (110%), AVR should block and >V signal will appear after 3Sec. if the voltage stay at the same level for 4Sec more, inhibit high signal will appear.

8. Apply voltage less than the under-voltage limit value (90%), AVR should block and <V signal will appear after 3Sec. if the voltage stay at the same level for 4Sec more, inhibit low signal will appear.

9. Apply voltage greater or lower than the desired value by more than 4%, in the same time inject current more than the overcurrent limit value (110%), AVR should block and >I signal will appear instantaneous.

10. Record all the results.

TECHNOMASTER C.R 40980 El Iasalky st Maadi - Cairo - Egypt

1. Setting

Item	Value
Set point of Primary Voltage	6.6 KV
Set point of Secondary Voltage	110 V
Desired Value	+/- 4%
T1	60 Sec.
T2	10 Sec.
Over Voltage	10%
Under Voltage	-10 %
Over Current	110 %

2. **Programmable Led**

No	Item	Remark
1	Remote	OK
2	Local	OK
3	< V	OK
4	>V	OK
5	Inh. High	OK
6	Inh. Low	OK
7	Par.prog	Ok
8	Tc in prog	Ok
9	Up	Ok
10	Down	Ok
11	>I	Ok

3. Manual operation is working properly input and Output as Scheme during carry out Function

TECHNOMASTER C.R 40980 El Iaselky st Maadi - Cairo - Egypt

4. <u>Automatic operation</u>

a. Measurement:

Applied voltage (V)	Reading voltage (KV)	Applied current (A)	Reading Current (A)
63.5	6.597	5	1252

a. Test Results:

Applied voltage (V)	Applied current (A)	AVR behavior	Result
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69	5	Lower a tap after T2=10 sec so on.	OK
58	5	Raise a tap after T2=10 sec so on.	OK
57	5	AVR blocked due to UNDER-VOLTAGE &Inhibit Low	OK
70	5	AVR blocked due to OVER-VOLTAGE &inhibit high	OK
66.5	5.6	AVR blocked due to OVER-CURRENT	OK
60.5	5.6	AVR blocked due to OVER-CURRENT	OK

TECHNOMASTER C.R 40930 Cairo - Egypt

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.10- Electrical Pre-Commissioning Check Lists

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/1-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/1-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P2-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P2-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh	® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	GENERAL:		
1.1	Construction punch list to be checked.	✓	
1.2	Check transformer assembly as per General Arrangement Drawing.	✓	
1.3	Verify equipment nameplate ratings are in accordance with the drawings.	✓	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage.	✓	
1.5	Inspect radiator fins, conservator tank, joints for leakage after oil filling or top-up.	✓	
1.6	Inspect all bushings for cracks.	✓	
1.7	Inspect silica gel for normal color.	✓	
1.8	Inspect and ensure cleanliness of all marshalling boxes, junction boxes, …etc	✓	
1.9	Check tap changer padlocking facility.	✓	
1.10	Check earthing connections to the earthing grid.	✓	

REMARKS AND OBSERVATIONS :

Refer to schnider check list & tests Certificats

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.11	All supports needed for power and control cables to be checked.	✓	
1.12	Wiring of control and protection devices to be checked.	✓	
1.13	Check installation against supplier installation procedure and instructions.	✓	
1.14	Bus duct(s) connections to be checked and inspected according to the approved supplier documents and recommendations.	N/A	
1.15	Check components of the remote control panel (function, tap and physical check, assembly, connections as per approved documents,.etc).	✓	
1.16	Perform a transformer turns-ratio test.	✓	
1.17	Perform dielectric tests of transformer oil (*).	✓	
1.18	Check oil level or supply and fill up with oil as per specifications.	✓	
1.19	Check C.T rating and polarity w.r.t approved drawings.	✓	
1.20	Check for proper tap position.	✓	
1.21	Check winding insulation resistance (H.V to earth, L.V to earth & H.V to L.V) (**).	✓	

REMARKS AND OBSERVATIONS :

(*) Insulation on transformer oil sample (Breakdown test)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.22	Check & record insulation resistance of all auxiliaries & control wiring (MΩ), using 500 V megger.	✓	
1.23	Verify that the control and alarm settings on temperature indicators are as specified.	✓	
1.24	Using the calibrated torque-wrench method, verify that the tightness of accessible bolted electrical connections w.r.t supplier standard.	✓	
2	**OFF-LOAD TAP CHANGER:**		
2.1	Ensure that the tap changer is Padlockable in all positions.	✓	
2.2	Check tap-selector switch moves correctly in all positions.	✓	
2.3	Check tap positions clearly marked in line with the data given on the rating plate.	✓	
2.4	Check the tap provided with metallic handle to allow operation without the need of tools.	✓	
3	**ON-LOAD TAP CHANGER:**		
3.1	Check devices (tap and physical check, assembly, connections as per approved documents, etc) of the tap changer oil compartment:		
	a) Oil level indicator.	✓	

REMARKS AND OBSERVATIONS :

(**) - H.V terminals: 5000 V megger, min. 150 MΩ.
- L.V terminals: 1000 V megger, min. 10 MΩ.
- H.V/L.V termerminals: 5000 V megger, min. 150 MΩ.
(Manufacture's test voltage & minimum values for insulation resistance should be referenced)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		® Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	b) Oil temperature indicator.	✓	
	c) Pressure device.	✓	
	d) Winding temperature indicator.	✓	
	e) Buchholz oil/gas device.	✓	
	f) Oil sampling connection.	✓	
	g) One filling/filter connection valve.	✓	
	h) One drain/filter connection valve.	✓	
	i) A breather with a silica gel dehydrating capsule.	✓	
3.2	Check the motor drive shall include but not limited to the following:		
	a) Padlockable incoming supply switch.	✓	
	b) Manual operation facilities.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
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ITEM TAG No.	: 030-SUB-PTR-1A	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	c) Local control facilities.	✓	
	d) Local/remote selector switch.	✓	
	e) Local mechanical tap position indicator.	✓	
	f) Direction of rotation protection.	✓	
	g) Tap status indication lamps.	✓	
4	Equipment test inspection report and certificate to be checked and acceptance criteria values of the above mentioned tests to be revised.	✓	
5	Check availability of vendor documents including commissioning and start-up instructions.	✓	
6	Calibration test certificate of testing equipment to be checked.	N/A	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: C2-030-SUB-PTR-1B	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C2-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/3-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/3-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/3-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/3-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/2-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/2-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sabir		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE	Sabh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N/A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	—	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	—	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	—	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

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PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	**GENERAL:**		
1.1	Construction punch list to be checked.	✓	
1.2	Check transformer assembly as per General Arrangement Drawing.	✓	
1.3	Verify equipment nameplate ratings are in accordance with the drawings.	✓	
1.4	Inspect the physical and mechanical condition of the equipment for any visual damage.	✓	
1.5	Inspect radiator fins, conservator tank, joints for leakage after oil filling or top-up.	✓	
1.6	Inspect all bushings for cracks.	✓	
1.7	Inspect silica gel for normal color.	✓	
1.8	Inspect and ensure cleanliness of all marshalling boxes, junction boxes, …etc	✓	
1.9	Check tap changer padlocking facility.	✓	
1.10	Check earthing connections to the earthing grid.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.11	All supports needed for power and control cables to be checked.	—	
1.12	Wiring of control and protection devices to be checked.	✓	
1.13	Check installation against supplier installation procedure and instructions.	✓	
1.14	Bus duct(s) connections to be checked and inspected according to the approved supplier documents and recommendations.	N/A	
1.15	Check components of the remote control panel (function, tap and physical check, assembly, connections as per approved documents,.etc).	✓	
1.16	Perform a transformer turns-ratio test.	✓	
1.17	Perform dielectric tests of transformer oil (*).	✓	
1.18	Check oil level or supply and fill up with oil as per specifications.	✓	
1.19	Check C.T rating and polarity w.r.t approved drawings.	✓	
1.20	Check for proper tap position.	✓	
1.21	Check winding insulation resistance (H.V to earth, L.V to earth & H.V to L.V) (**).	✓	

REMARKS AND OBSERVATIONS :

(*) Insulation on transformer oil sample (Breakdown test)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1.22	Check & record insulation resistance of all auxiliaries & control wiring (MΩ), using 500 V megger.	✓	
1.23	Verify that the control and alarm settings on temperature indicators are as specified.	✓	
1.24	Using the calibrated torque-wrench method, verify that the tightness of accessible bolted electrical connections w.r.t supplier standard.	✓	
2	**OFF-LOAD TAP CHANGER:**		
2.1	Ensure that the tap changer is Padlockable in all positions.	✓	
2.2	Check tap-selector switch moves correctly in all positions.	✓	
2.3	Check tap positions clearly marked in line with the data given on the rating plate.	✓	
2.4	Check the tap provided with metallic handle to allow operation without the need of tools.	✓	
3	**ON-LOAD TAP CHANGER:**		
3.1	Check devices (tap and physical check, assembly, connections as per approved documents, etc) of the tap changer oil compartment:		
	a) Oil level indicator.	✓	

REMARKS AND OBSERVATIONS :

(**) - H.V terminals: 5000 V megger, min. 150 MΩ.
- L.V terminals: 1000 V megger, min. 10 MΩ.
- H.V/L.V termerminals: 5000 V megger, min. 150 MΩ.
(Manufacture's test voltage & minimum values for insulation resistance should be referenced)

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
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DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

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PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	b) Oil temperature indicator.	✓	
	c) Pressure device.	✓	
	d) Winding temperature indicator.	✓	
	e) Buchholz oil/gas device.	✓	
	f) Oil sampling connection.	✓	
	g) One filling/filter connection valve.	✓	
	h) One drain/filter connection valve.	✓	
	i) A breather with a silica gel dehydrating capsule.	✓	
3.2	Check the motor drive shall include but not limited to the following:		
	a) Padlockable incoming supply switch.	✓	
	b) Manual operation facilities.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

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PRE-COMMISSIONING CHECK LIST
POWER TRANSFORMERS
EL-02 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
	c) Local control facilities.	✓	
	d) Local/remote selector switch.	✓	
	e) Local mechanical tap position indicator.	✓	
	f) Direction of rotation protection.	✓	
	g) Tap status indication lamps.	✓	
4	Equipment test inspection report and certificate to be checked and acceptance criteria values of the above mentioned tests to be revised.	✓	
5	Check availability of vendor documents including commissioning and start-up instructions.	✓	
6	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobl		
DATE			

10000-Z-000-EK7-TMP-0028 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

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PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N/A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Fixation, alignment and installation of NER to be checked.	✓	
3	Check equipment tag number and nameplate details are correct in accordance with the data sheet.	✓	
4	Inspection the frame earthing arrangement.	✓	
5	All supports needed for cables to be checked.	✓	
6	Inspect physical and mechanical condition of the equipment and all components for clear damage.	✓	
7	Check gasket and seals are not damaged.	✓	
8	All equipment to be cleaned.	✓	
9	Check the space heater and circuit where fitted.	✓	
10	Check & record resistance of resistor with site conditions.	✓	
11	Verify that the connection of the resistor is as per the approved drawings.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobhi	Sherif	
DATE			

10000-Z-000-EK7-TMP-0024 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	All internal wiring connection are fixed and secure.	✓	
13	Measure the insulation resistance of the resistor to earth.	✓	
14	Perform insulation-resistance tests at the DC test voltage appropriate for the equipment's Maximum Rated Voltage (*)	✓	
15	Equipment test report and inspection certificate to be checked.	✓	
16	Check availability of vendor documents, including commissioning and start-up instructions.	N/A	
17	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table [II]

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh	Sherif	
DATE			

10000-Z-000-EK7-TMP-0024 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

INSULATION TEST

TABLE OF MINIMUM TEST VOLTAGES

EQUIPMENT RATED VOLTAGE (kV)	TEST VOLTAGE (V) (ONE MINUTE)	MINIMUM INSULATION RESISTANCE (M.OHMS)
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
CONTROL WIRING	500	10

TABLE [II]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Ishan Sheriff	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N/A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE		Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Fixation, alignment and installation of NER to be checked.	✓	
3	Check equipment tag number and nameplate details are correct in accordance with the data sheet.	✓	
4	Inspection the frame earthing arrangement.	✓	
5	All supports needed for cables to be checked.	✓	
6	Inspect physical and mechanical condition of the equipment and all components for clear damage.	✓	
7	Check gasket and seals are not damaged.	✓	
8	All equipment to be cleaned.	✓	
9	Check the space heater and circuit where fitted.	✓	
10	Check & record resistance of resistor with site conditions.	✓	
11	Verify that the connection of the resistor is as per the approved drawings.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0024 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100		
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	DISCIPLINE	: Electrical
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	SUB-SYSTEM ID	: 030-EL-001
REF. DWGs/DOCs	:	AREA	: 30

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	All internal wiring connection are fixed and secure.	—	
13	Measure the insulation resistance of the resistor to earth.	—	
14	Perform insulation-resistance tests at the DC test voltage appropriate for the equipment's Maximum Rated Voltage (*)	—	
15	Equipment test report and inspection certificate to be checked.	—	
16	Check availability of vendor documents, including commissioning and start-up instructions.	N/A	
17	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table [II]

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0024 (04/14)

Enppi

PRE-COMMISSIONING CHECK LIST
NEUTRAL GROUNDING RESISTOR
EL-09 A

INSULATION TEST

TABLE OF MINIMUM TEST VOLTAGES

EQUIPMENT RATED VOLTAGE (kV)	TEST VOLTAGE (V) (ONE MINUTE)	MINIMUM INSULATION RESISTANCE (M.OHMS)
33	5000	200
22	5000	200
11	5000	200
6.6	1000	200
3.3	1000	200
CONTROL WIRING	500	10

TABLE [II]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables (power/ control) are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, tightness, termination and joints of cables are correctly executed.	✓	
7	Check where conductors have been terminated using crimped connections; ensure the correct size and type of crimping lugs.	✓	
8	Check that the bending radius of cables is not less than the minimum established.	✓	
9	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
10	Tie wraps to be used for cable and wires fixation.	✓	
11	Cable connections shall be torque tested.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: 030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Check that buried cables are correctly covered and protected.	N/A	
13	Trench markers to be checked w.r.t approved documents.	N/A	
14	Check cable glands for tightness & check the correct type of gland has been used for the size and type of installed cables.	✓	
15	Inspect cable laid in trenches, segregation and protection.	N/A	
16	Cables to be tested (continuity/insulation resistance). (*)	✓	
17	Equipment test report and inspection certificate to be-checked.	✓	
18	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
19	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

(*) Refer to table (III).

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0014 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
LOW VOLTAGE CABLES
EL-30 A

INSULATION TEST

LOW VOLTAGE CABLES

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
1000V	1000V	200

TABLE [III]

NOTES:

Manufacture's test voltage & minimum values for insulation resistance should be referenced.

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/1-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P/1-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C3-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C3-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh	Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C3-030-SUB-AVR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C3-030-SUB-AVR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G1-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G1-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C1-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C1-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C1-030-SUB-AVR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: C1-030-SUB-AVR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	NA	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G2-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G2-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G2-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		® Islam Sherif	
SIGNATURE	Sabh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G2-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME		Islam Sherif	
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G1-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: G1-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P-030-SUB-AVR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: P-030-SUB-AVR-1A	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	—	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	—	
14	Inspect cable laid in trenches, segregation and protection.	—	
15	Cables to be tested (continuity/insulation resistance).(*)	—	
16	Equipment test report and inspection certificate to be-checked.	—	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	—	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sabh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P-030-SUB-AVR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	—	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	—	
14	Inspect cable laid in trenches, segregation and protection.	—	
15	Cables to be tested (continuity/insulation resistance).(*)	—	
16	Equipment test report and inspection certificate to be-checked.	—	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	—	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-PTR-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	DISCIPLINE	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SYSTEM ID	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	SUB-SYSTEM ID	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-PTR-1B	AREA	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh	Islam Sherif	
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

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PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-NER-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobh		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

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PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P1-030-SUB-NER-1B	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

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PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE	Sobhy		
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

PROJECT TITLE	: EDPCCrude Oil Tank Farms Priject, Agrood Area 30 (Module-01)		
PROJECT NUMBER	: 1251-100	**DISCIPLINE**	: Electrical
SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SYSTEM ID**	: 030-EL-001
SUB-SYSTEM NAME	: Substation Power Transformers 11/6.6kV System	**SUB-SYSTEM ID**	: 030-EL-001
ITEM TAG No.	: P2-030-SUB-PTR-1A	**AREA**	: 30
REF. DWGs/DOCs	:		

No.	DESCRIPTION	RESULT OK/NA/PL	PL ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

10000-Z-000-EK7-TMP-0017 (03/14)

Enppi

PRE-COMMISSIONING CHECK LIST
MEDIUM VOLTAGE CABLES
EL-31 A

INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

12.11- Electrical Supplier Check Lists & Reports

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

13- Electrical Commissioning

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

13.01- Electrical -Commissioning Check Lists

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

13.02- Electrical Supplier Check Lists & Reports

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

14- Red Marked-up Drawings

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

14.01- P&ID

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

14.01- P&ID

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

14.02- Instrumentation Drawings

System ID	030-EL-001
System Description	Substation Power Transformers 11/6.6kV

14.03- Electrical Drawings